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THE UNIVERSITY OF ALBERTA

APPLICATION OF THE INDIFFERENCE RELATION TO AGRICULTURAL  
COMMODITY FUTURES SPREADS FOR PREDICTION  
OF QUALITATIVE MOVEMENTS

by

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## ABSTRACT

Few fields of endeavor offer as good an opportunity to make large profits rapidly as does speculation in the commodity futures market. Speculative profits of several hundred or even thousands of percent are not uncommon. By the same token, for each person who profits, someone must lose. Thus over time speculators have gone to great lengths to "beat the system." Basically two main types of analysis of the futures market have been developed: fundamental and technical analysis. However, a new method of predicting futures price changes through the use of volume and open interest data has given even greater insight. The resulting model, based on generally accepted economic theory has associated with it certain assumptions that are made with respect to the behavior of futures market participants.

Over 600 commodity spreads for the period 1958-1968 have been examined along with volume and open interest data. There appears to be little doubt that, for five of the six commodities tested, volume and open interest are related to commodity price spreads and explain part of the non-random commodity price changes occurring over time.





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## CHAPTER I

### INTRODUCTION

#### The Problem, The Purpose, The Objectives

Relative to the history of organized economic thought, commodity futures markets are old institutions.<sup>1</sup> During the evolution of commodity futures markets there was a parallel development of a group of people determined to profit from the wide and often rapid price changes that take place in commodity futures prices. The people making up this group evolved into today's modern commodity futures speculators.

Each speculator, even though he may not realize it, has a strategy that he uses in making decisions concerning his course of action in the futures market. Purchase and sale of commodity futures may be based on strategies involving the phases of the moon or sophisticated mathematical models. Yet even with these sometimes occult methods, futures prices are notoriously difficult to predict. Furthermore, there are many speculators who have managed to correctly predict the long-range prices of commodity futures only to awaken one morning to find that they have gone bankrupt before their avaricious dream could bear fruit.

The fact that improvements might be made in the ex-ante analysis of futures prices appears to be self evident. Therefore the purpose of this study is to develop a new model for predicting futures price movements by relying primarily on generally accepted economic theory. The prime objective here is rooted in a desire to reduce the risk involved in commodity futures speculation and thus increase the profits

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<sup>1</sup> Any terms which are peculiar to the futures market are underlined in the text and defined in Appendix A.



accruing from this activity. The plan of attack is to make the reader familiar with the evolution and mechanics of futures trading, to consider the major types of analysis presently used and to discuss certain aspects of economic theory. An attempt is made to apply the new analytical method developed herein to past data on futures prices and to determine to what extent it may be used as a predictive device.

### History and Evolution of the Futures Market

Bakken traces the origin of the futures market to Japan in the Tokugawa era.<sup>1</sup> During that period feudal lords were required to spend at least six months per year in Tokyo under the watchful eye of the central government. The government felt that there was less likelihood of rebellion if the lords were prevented from remaining in distant parts of the empire for extended periods of time.

Because the expenses incurred during the Tokyo stay were substantial, the lords would haul agricultural products, notably rice, produced on their manors to Tokyo or Osaka for conversion into cash. This practice would be equivalent to the sale of grain on the cash market today. The lords occasionally overspent their budgets. In order to raise the needed cash quickly they would issue tickets against commodity supplies which they had stored either in the country or in rented city warehouses. Merchants bought these tickets in anticipated needs and eventually began to offer credit upon the noble's tender of a ticket attesting to his expected production of rice. This trading of commodities not yet in existence provides an early example of forward

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<sup>1</sup> The Tokugawa era covered a period from about 1500 - 1700. Henry H. Bakken, Futures Trading Seminar, Volume III (Madison, Wisconsin: Mimar Publishers, Inc., 1966), pp. 1-36.



sales. In time these tickets became negotiable, opening speculative opportunities for individuals who perhaps had no desire either to sell rice or take actual delivery of it. Simply by purchasing a "rice ticket" and waiting for the price of rice to rise, a profit could be made without the holder of the "rice ticket" ever having handled the actual commodity. Of course, if the price of rice fell, a loss was incurred. By about 1650 an organized commodity futures market had been formed in Tokyo.<sup>1</sup>

North American futures markets had their beginnings around 1850.<sup>2</sup> By that time Chicago had developed into one of the major grain marketing centers in the United States. Part of the reason for Chicago's prominence was due to its easy accessibility by water to the grain producing areas of the country. Winter's freezing of the rivers leading into Chicago made the transport of significant quantities of grain to that center impossible. Often country grain buyers needed cash during the winter. In much the same manner as the feudal lords of Japan they sold grain purchased from farmers forward for delivery the next spring to buyers in Chicago. As in Japan, contracts to deliver and take delivery became negotiable. Thus the roles of the major participants in today's futures markets began to evolve. There were individuals interested in the purchase and sale of cash grain. On the periphery of the trade in actual grain there were speculators interested primarily in the purchase and sale of the contracts arising out of the trade in cash grain. The speculator had little interest in the grain itself,

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<sup>1</sup> Ibid., p. 10.

<sup>2</sup> Ibid., p. 3.



save through the possibility that the grain might undergo a price change in his favor. At some point in time the speculators themselves began to make contracts with the country grain buyers to take delivery of grain the following spring. Probably many of them never intended to meet the requirements of the contract. Sometime prior to the date the grain was to be delivered the speculator would sell the contract to someone else for the value of the grain to be delivered to fulfill the contract. The buyer of the contract might have been a person who had use for the grain or possibly another speculator. If the grain had risen in price from the time the speculator made the contract until he sold it, he made a profit. If it had fallen in price, he suffered a loss. Speculators also found that they could make contracts to deliver grain at some time in the future. Prior to the contract settlement date speculators would attempt to buy the contract back at prices lower than the initial selling price. If, for some reason, a speculator was unable to buy back his contract, he could buy grain and deliver it in fulfillment of his contract. (However, speculators generally would prefer not to do so, because grain buying would involve them in actual grain handling.) Contract purchase and sale for speculative purposes in the conduct of the actual grain trade had become important enough by 1867 that an organized futures exchange was formed in Chicago.<sup>1</sup>

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<sup>1</sup> Ibid., p. 3.





The possibility of profit and loss discussed above indicates that forward trading in commodities involves an element of risk.<sup>1</sup> Grain dealers and speculators stood to gain or lose money depending upon the course of prices from the beginning of winter to the following spring. Thus anyone who made a contract either to make or accept delivery at a certain price would first attempt to make an estimate of prices which would prevail in the future. The terms of these contracts would be conditional upon the traders' estimates of these prices. If a Chicago grain buyer could find someone who would make a contract to deliver grain at a price lower than or equal to that which the buyer expected in the future he would be willing to make the contract; if not, he would prefer to wait before making any commitment. The seller, in turn, would prefer to sell to someone who felt that prices would be higher than that which the seller foresaw. In the natural course of events, forward buyers sought several offers and forward sellers sought several bids. The buyer, of course, would take the lowest offer he could obtain and the seller would accept the highest bid. Through competition between buyers and sellers the difference between bids and offers would usually narrow to zero, and a price would be reached based on current expectations of future supply and demand conditions. Today forward prices for commodities are established much the same way, except that the job of forward price determination is generally performed

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<sup>1</sup> The possibility of misinterpretation may be present here. The implication in the example presented is that forward trading in commodities involves price risk over extended periods of time. However the ownership of any commodity even for the most infinitesimal period of time involves taking some risk, even though it might be a minute quantity.



within a more formal and structured futures market. Traders' actions in the market today serve collectively as a force which attempts to estimate a future equilibrium price (or prices) for a commodity (or commodities) on the basis of current estimates of future supply and demand conditions.

### Speculation and Market Analysis

The nature of the futures market is such that anyone able to estimate a future price more accurately than the group composed of the other participants in the futures market stands to profit from his superior knowledge or ability. For instance, in March the consensus of the participants in the futures market might be that the price of wheat next July will be \$1.50 per bushel. This consensus will be reflected in the quoted price for the July future. If someone more accurately predicts that the price of wheat in July will be \$1.60 per bushel, a profit can be made by buying the July wheat future for \$1.50 and selling it at some time up to and including its maturity date in July. If the speculator's price expectations were correct, the price of the July future will tend towards \$1.60 per bushel, and he can make a profit of up to 10 cents per bushel. On the other hand, if he predicts correctly that the price of wheat in July will be \$1.40 per bushel, rather than \$1.50 as quoted for the July future, a profit can be made by selling the July future short at \$1.50 per bushel and making the off-setting purchase prior to maturity of the contract.

To profit consistently from trading on the futures market, the speculator must make projections of prices that will be known with certainty only at a future date. Furthermore, his price



estimates must be more accurate than those of the other market participants together. The successful speculator must catch the market making mistakes. If the collective action of all the futures market participants results in all available information bearing on future supply and demand conditions being completely discounted, there will be no reason for the price of a given future to change except with the advent of new supply and/or demand information. This information must be unpredictable, otherwise in any perfect discounting situation, futures prices would have already reflected it. This point leads to the tautological conclusion that if participants in the futures market do a perfect job of discounting, price changes in the futures market must be random. If futures prices are random, there is no point in the profit maximizing speculator entering the market. His judgement can be no better than that arising from the consensus of the other market participants. The argument above supports the earlier conclusions that the successful speculator must catch the market in a mistake. Hence any predictive analysis of the futures market is predicated on the assumption that the participants in the futures market do make errors in discounting information. Working feels that the futures market does make errors in price determination.<sup>1</sup> Therefore, if the market does make errors in the assessment of a reaction to information, and the speculator

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<sup>1</sup> Working does feel, however, that price determination errors caused by imperfect discounting of information are probably small compared to those made due to the market's inability to predict randomly-occurring, price-affecting variables. Also from this point on, the terms of market or futures market will be used to imply the participants in the futures market. Holbrook Working, "The Investigation of Economic Expectation," American Economic Review, XXXIX (May 1949), 159.



wishes to take advantage of these errors, some type of analysis must be carried out to guide him in his actions.

There are basically two types of analysis. Perhaps the most widely used is fundamental analysis. The analyst attempts to estimate future supply and demand schedules and the price at which they will intersect. This price estimate will then be compared to the price prevailing in the futures market for delivery in the time period under consideration. If the two prices are different, the speculator will take the position that will allow him to profit. The concept is simple. However, two major problems can arise: the estimate made by the speculator may be incorrect, and/or the market may not realize the fact that his estimate is correct. In other words, the price change the speculator anticipated may fail to materialize before the maturity date of the futures contract of interest. Therefore, successful speculation not only requires that the speculator be able to estimate future prices more accurately than the market but that the market realize its mistake after the speculator has committed himself. The crux is not so much what is "true," but what the market thinks is "true."

The last statement leads to consideration of the second major type of analysis, that of charting. The chartists, by plotting monthly, weekly, and even hourly price movements and looking for what they consider to be characteristic price action, attempt to measure what the market is "thinking." Although the intent is not to provide a critical analysis of charting here, the following comment by Working bears mentioning.





A good many of them [chartests] are firm believers in the significance of head and shoulders formations, resistance levels and the like. Before accepting their opinion as valid evidence, however, one may wish to reflect on the fact that these traders rarely wear an air of prosperity and that their ideas are generally scorned by more substantial participators in the markets.<sup>1</sup>

Ancillary to the use of both of the foregoing types of analysis is consideration of volume and open interest.<sup>2</sup> Both types of analysis may draw on volume and open interest statistics, not so much as a predictive tool but as a means of re-affirming a conviction previously held by the analyst.

Both types of analysis previously considered suffer from flaws. The fundamental analyst leans heavily on estimation of factors outside the futures market and hopes that these will eventually be reflected in futures prices. The chartest largely ignores supply and demand and relies on measuring market psychology. Neither of the two types of analyst attempts to make direct measurement of supply and demand within the futures market itself, even though this would appear to be a fruitful approach.

If quantities demanded and supplied could be estimated directly for the futures market and prices checked to see if they are consistent with market demand and supply, a profitable speculative strategy might be devised.<sup>3</sup> The development of such a strategy is the objective of this study.

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<sup>1</sup> Working, op. cit., p. 156.

<sup>2</sup> Volume is the number of contracts of a given commodity that are traded per unit of time. Open interest is the number of contracts held at a given point in time. Measurement of open interest is made at the end of the trading day and is expressed as the number of contracts that are still held requiring acceptance of delivery at some future time. The topics of volume and open interest are given expanded consideration further on.

<sup>3</sup> The terms quantities demanded and supplied are used here in the same sense that they are used in economic theory.



## CHAPTER II

### THE MECHANICS OF THE FUTURES MARKET

#### The Futures Contract

A complete discussion of the futures market provides material for a complete volume. This study is involved with speculation in the futures market rather than the futures market itself. Therefore, consideration given the futures market per se will be general, although a few specific points will be covered where necessary.

Central to the aim of this study is the nature and meaning of the futures contract. An attempt is made in the previous chapter to provide an heuristic understanding of a futures contract by discussing the evolution of contracts which require future delivery and acceptance of delivery of commodities. Futures contracts bought and sold today are considerably more uniform than those traded in the early days of forward trading. The contract calls for the delivery or acceptance of delivery of a certain quantity and quality of a certain commodity in a certain month. For example, Chicago wheat futures are traded for delivery in March, May, July, September, and December in units of 5,000 bushels of number 2 Soft Red wheat.<sup>1</sup> In fact, all grains traded on the Chicago Board of Trade are traded in lots of 5,000 bushels.<sup>2</sup> Other exchanges, such as the Winnipeg Grain Exchange, allow trade in odd-lots

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<sup>1</sup> Some other grades are deliverable either at a premium or discount depending on the grade.

<sup>2</sup> Most of the emphasis in this work is on commodities traded on the Chicago Board of Trade in Chicago. Further discussion of the commodities that are considered herein is given in a later chapter.



of 1,000 bushels or multiples thereof. Further, each futures contract has a minimum allowable price change as well as a maximum daily price change imposed upon it. For instance, if the price of a wheat futures contract trading on the Chicago Board of Trade is to change, it must change at least  $1/8$  of 1 cent per bushel and may not change more than 10 cents per bushel from the close of one day's trading to the close of the next.

### Participants in a Futures Market

There are basically two groups of buyers and sellers in a futures market--the hedgers and the speculators. The hedger is a person or firm with a vested interest in ownership of actual commodities. In the wheat market, for instance, hedgers include country grain buyers, flour millers, grain merchants selling grain for export, or wheat farmers. Each of these individuals or the firms they represent have one thing in common: the desire to eliminate or reduce the risk of wheat price changes. In any given delivery month the price of cash wheat in Chicago will approximate the futures price for that same delivery month.<sup>1</sup> For example, a Chicago flour miller may buy enough wheat in March to meet his anticipated need in September. Having made the wheat purchase, he may sell enough September futures contracts to offset his stocks of wheat. Wheat price changes can occur during the period from March to September. Because the price of cash wheat and futures wheat tend to equality in the delivery month (September in this case), hedging protects the flour miller from price changes. If

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<sup>1</sup> Thus in the month of September the price of the September wheat future will very nearly equal the price of actual wheat in store in Chicago.



the price of cash wheat has fallen by September, the price of the September future will also have fallen. Although the miller has incurred a loss on his wheat stocks, he will have profited by about an equal amount on his short sale of wheat futures.<sup>1</sup> If the price of wheat rises in the period under consideration, he will lose money on his sale of futures but will gain nearly an equal amount from the increase in value of the wheat he has in storage. This discussion offers an example of a short hedge.

The opposite hedging position is known as a long hedge. This procedure may be illustrated by considering the case of a grain merchant with overseas customers. One of these customers contacts the merchant in March and offers to buy wheat for delivery in July for a certain price of, say, \$1.60 per bushel basis in store Chicago. The grain merchant obtains a quote for the July future and makes his decision. Suppose that the July wheat future is trading for \$1.55 per bushel. He buys Chicago July wheat at \$1.55 per bushel and informs his customer that his bid of \$1.60 per bushel is acceptable. When July comes the grain merchant has two alternatives--either take delivery of the wheat he bought in the futures market or sell his futures contracts and buy wheat in the cash market.<sup>2</sup> The wheat from either of these sources can then be delivered to the customer in fulfillment of the exporter's

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<sup>1</sup> The word "about" is used here because in actuality the possibility of basis changes must be considered. In the example presented here, where the miller has wheat in store in Chicago and hedges his wheat on the Chicago futures, any basis change would likely be small.

<sup>2</sup> In practice, the exporter will probably sell his futures contracts and buy cash wheat rather than go through the somewhat more complex procedure of taking delivery.





obligation. As in the case of the short hedger, the long hedger is largely protected from price changes during the period running from March through the expiry of the July futures contract.<sup>1</sup> If the price of wheat rises during the period under consideration, he will make money on his futures contract. If it falls, he will be able to purchase wheat in the cash market at a price lower than that specified in the contract with his overseas customer.

Contracts traded for the purpose of hedging make up a substantial portion of the total open interest on most futures markets. Exact estimates of these quantities are somewhat difficult because not all traders in the futures market are required to report their position.<sup>2</sup> However, in the year running from July 1, 1967, to June 30, 1968, the average of mid-month and month-end commitments of reporting traders for that year indicated that about 12 percent of the total open interest arose from long hedging and about 39 percent from short hedging.<sup>3</sup>

The speculator's aim in the futures market is generally different from that of the hedger. The speculator's prime objective

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<sup>1</sup> As with the short hedger, the long hedger must consider the possibility of an unfavorable basis change.

<sup>2</sup> The Commodity Exchange Authority in the United States requires that traders holding over a certain number of futures contracts report the number of bushels held and whether they are held for speculative purposes or as hedges. For instance, anyone holding 200,000 bushels of wheat in any or all futures months is reportable. This regulation is imposed primarily as a safeguard against manipulative attempts. Failure to report when required may result in the transgressor being barred from trading.

<sup>3</sup> United States Department of Agriculture, Commodity Exchange Authority, Commodity Futures Statistics, July 1967 - June 1968, Statistical Bulletin No. 432 (Washington, D.C.), p. 43.



is to correctly project price changes for profit. The hedger's major objective is to avoid the effect of large price fluctuations.<sup>1</sup>

There are two basic speculative procedures used. The most commonly used is the purchase (or sale) of a future or futures in the expectation of a price rise (or price fall). A speculator who has bought is said to be long or (sometimes) net long. One who has sold is said to be short or net short.

The second speculative procedure is that of spreading. In this case the speculator purchases one future and sells another. Thus his expectation is that the future he has purchased will rise in price relative to the one he has sold. The futures purchased and sold may be traded on different exchanges<sup>2</sup> or on the same exchange.<sup>3</sup> The speculator may also spread two different commodities in the same or different markets.<sup>4</sup> The spread has the feature that absolute price levels are of secondary importance to the more important relative price changes of the two futures.

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<sup>1</sup> There is considerable evidence that hedgers do engage in some speculation on the basis. For example, see Holbrook Working, "Hedging Reconsidered," Journal of Farm Economics, XXXV (January 1949), 544-561.

<sup>2</sup> An example of this type of spread might be Chicago July rye against Winnipeg July rye, although the speculator is not restricted to trading in the same month on both exchanges.

<sup>3</sup> For instance, the speculators might buy Chicago July wheat and sell Chicago September wheat in hopes that July wheat will rise in price relative to September.

<sup>4</sup> An example might be the purchase of Chicago September corn against the sale of Chicago December or March wheat or the purchase of Chicago September corn against the sale of Kansas City December or March wheat.



## Placing and Filling of Orders

Although the intent of the hedger and speculator upon entering the market is generally different, the method of placing and executing orders is the same. Familiarity with the placing and filling of orders is important in order to understand the futures market; therefore, these two activities are illustrated. Suppose that someone in Edmonton is convinced that the price of wheat will rise. He has never speculated in the commodity futures market before. His first step would be to visit one of the commodity brokers in that city and open an account. Opening an account basically entails provision of pertinent details to the brokerage company (name, address, age, etc.), as well as agreement to cover any losses incurred in the trading of commodities. Once an account has been opened, the broker or his agent will ask for a margin deposit. In the case under consideration the speculator wants to buy wheat (say September wheat). He will be required to deposit at least 10 cents per bushel of wheat bought. Since the minimum contract size for Chicago wheat is 5,000 bushels, the amount involved would be at least \$500 per contract. This initial deposit is known as original margin. The following day he may withdraw up to 2 cents per bushel leaving him with the required maintenance margin.<sup>1</sup> Presumably the higher original margin requirement is invoked so that the broker may be assured that the speculator has the financial resources to withstand some (at

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<sup>1</sup> The assumption here, of course, is that the price the next day is the same as that at which the wheat was purchased. Also, 8 cents per bushel is the minimum maintenance margin required by the Chicago Board of Trade. Individual brokerage houses may set higher margin requirements.



least minor) losses. Throughout the time the speculator holds his contract of Chicago wheat, he will be required to keep at least 8 cents per bushel on deposit with the broker. In other words, if he has bought wheat and the price falls, he will be required to put up additional margin. If his margin deposit falls below the required 8 cents per bushel, he must bring his margin deposit up to the original margin level of 10 cents per bushel. His failure to do so will result in the broker unilaterally disposing of his customer's holdings.

Once the speculator has opened his account he may begin trading. Suppose the price of Chicago September wheat is \$1.30 per bushel. There are several types of orders the speculator may use.<sup>1</sup> One of these is a market order. On an order pad the customer or his broker writes the following:

Buy 5 C.B.O.T. September wheat, market order.<sup>2</sup>

The number "5" stands for the number of bushels in thousands, and the term "market order" means that the buyer is willing to buy from the seller making the lowest offer. There is also a tacit assumption that in the event of a price rise prior to the execution of the order the buyer is still committed to accept the lowest offer available.<sup>3</sup> Thus in using a

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<sup>1</sup> Only two types of orders will be mentioned at this point. Several other types of orders are defined in Appendix A and are listed in alphabetical order.

<sup>2</sup> In practice after the initial opening of an account most orders are given and received over the telephone, thus the broker usually copies a verbal order telephoned by the customer. C.B.O.T. is an abbreviation used to stand for Chicago Board of Trade. Also the exact syntax of an order varies from firm to firm; the form used here is typical.

<sup>3</sup> The buyer at any time can, of course, cancel his order. However, market orders are usually filled so quickly that it is unlikely that a market order could be cancelled before it is filled.





market order there is a risk of getting what is known as a "bad fill." It is possible that the speculator in the example presented above could find himself the owner of a contract of wheat purchased at a price higher than he would normally have been willing to pay.

Another type of order is designed to prevent "bad fills." This is the limit order. In this case the order would read as follows:

Buy 5 C.B.O.T. September wheat, 1.30 or less.<sup>1</sup>

This order indicates the buyer's willingness to buy September Chicago wheat only at a price of \$1.30 per bushel or less. The buyer may also specify the length of time for which an order is to remain in effect. The two most commonly used are the day order and the open order. The day order infers that if the order is not filled that day, it should be cancelled pending further instructions. Appending the term "open order" to an order implies that the buyer is willing to purchase September wheat at \$1.30 per bushel or less as soon as anyone is willing to sell for that price or until the order is cancelled or the September future expires.

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<sup>1</sup> Spread orders are written in a similar form as those used as examples above. Thus a speculator wishing to buy Chicago September wheat and sell Chicago December wheat would write his order as follows: "Buy 5 C.B.O.T. September wheat, sell 5 C.B.O.T. December wheat, 2 cents premium or less, September, open spread order." This order indicates the speculator's willingness for an indefinite period to buy September wheat and sell December wheat at any time when the two futures are 2 cents or less different in price. Of course, he need not specify a premium; simply deleting the phrase "2 cents premium or less September" and inserting the term "market spread order," indicates his willingness to take the prevailing price spread.



Once an order has been written, the broker will take or have it taken to the teletype operator in his company's wire room.<sup>1</sup> The order will then be transmitted to the company's traders in Chicago, either direct or via Winnipeg.<sup>2</sup> Once an order is received in Chicago, it is written on another form marked "private wire" and handed to the company's telephone operator located on the floor of the Chicago Board of Trade. The operator on the floor of the exchange is given the order. He will in turn communicate it to a floor broker, either by hand signals (if possible) or in written form by messenger. The floor broker will then attempt to fill the order by trying to find a seller among the other buyers and sellers on the floor.

Trading on the floor of the exchange is done in a number of octagonal pits which, as the name indicates, are recessions in the floor. Generally a different commodity is traded in each pit.<sup>3</sup> One step in each pit is allocated to the trade of a specific future month, with the nearest future being traded on the top step, the second nearest future on the second step, and so on. Suppose that the speculator in the example under consideration placed his order for September wheat in the month of August. The pit broker would move to the top step of the pit

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<sup>1</sup> Board of Trade of the City of Chicago, Commodity Trading Manual (Wilmette, Illinois: Commodity Press, 1968), pp. 85-111.

<sup>2</sup> Whether an order originating in Canada goes direct to Chicago or via Winnipeg depends on the location of the company's head office. Some Canadian companies headquartered in Winnipeg have their orders sent there for transmission to Chicago. Other firms send their orders direct to Chicago.

<sup>3</sup> The exceptions on the Chicago Board of Trade (which is of primary concern here) are soybean meal and soybean oil which are traded in the same pit. Also beef, grain sorghum, and lard are traded together in a common pit.



as soon as possible and vocally state his intention to buy 5,000 bushels of September wheat.<sup>1</sup> If the order is a market order he will buy from the seller making the lowest offer. If not, he will state the price at which he is willing to buy. When the pit broker has filled the order, he will transmit the fact to his company's telephone operator on the floor. This operator in turn will notify the telephone operator in the wire room of the fill. The teletype operator in the wire room will then inform the office from which the order originated that the order has been filled. The speculator, out of whose purchase of wheat this example arose, will then be informed that he has purchased 5,000 bushels of September Chicago wheat at a certain price.

The pit broker whose activities figured prominently in the foregoing example is only one member of the class of pit traders who do the actual buying and selling on the floors of organized commodity futures exchanges. In all there are three main groups making up the group of pit traders.

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<sup>1</sup> Trading regulations state that all bids and offers must be made by open outcry. However, the noise level in the pits at times is so high that vocal bids and offers must be augmented by hand signals; a palm turned away from the trader indicating a desire to sell; a palm turned toward the trader indicating a desire to buy. When necessary, prices are signaled with the other hand, fingers being used to indicate the number of eighths of a cent above or below the prevailing market price the buyer or seller is willing to accept. Thus a buyer would show his desire to buy one eighth of a cent below the prevailing price by turning one hand (usually the right) towards himself and extending the forefinger of the left hand. Two fingers indicate one quarter of a cent, three fingers, three-eighths, and so on. One obvious problem arising here is that eight fingers would be required to indicate a full cent. Similar problems arise in attempting to signal three quarters or seven eighths of a cent. This human shortcoming is overcome by signaling three quarters of a cent by extending the hand with the fingers held tightly together (as opposed to spread as in the case of five-eighths or a cent); seven eighths of a cent as a closed fist with the thumb pointed upward and a full cent as a closed fist with the thumb held down.



The first is the group made up of pit brokers, one of which was considered in the example above.<sup>1</sup> These exchange members execute business for their employers and are sometimes (though not always) forbidden to engage in trading for their own accounts.<sup>2</sup>

The second group is made up of professional speculators who are engaged in speculation primarily for their own accounts. These speculators may be position traders who hold contracts for extended periods of time, or day traders who hold contracts for less than one trading session. Also a given speculator may alternatively be a day trader or a position trader depending on his convictions concerning price changes in the future. He may also occasionally trade for others. The third group is composed of scalpers. Although the distinction between the day trader and the scalper is narrow and sometimes non-existent, the scalper is usually characterized as holding contracts for very short periods of time, even seconds. The scalper usually trades contracts in large volume and measures his profits per bushel in eighths of a cent.

#### Profit Calculation

Since speculators trade in hopes of making a profit, the calculation of profit and loss requires consideration. Recall that the speculator in the example is required to keep 8 cents per bushel margin on deposit with his Edmonton broker. If, prior to the expiry of the

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<sup>1</sup> Seats or trading privileges can only be held by individuals. Thus a brokerage company wishing to trade on the floor of an exchange must purchase a seat for an individual who will do their trading.

<sup>2</sup> Board of Trade of the City of Chicago, op. cit., p. 104.





September futures contract, the price of that future had risen 2 cents per bushel, the speculator would have a profit of 25 percent or \$100 in United States funds.<sup>1</sup> If the speculator wishes to take his profit at this point, he can telephone his broker and give the order to sell 5,000 bushels of Chicago September wheat in a manner similar to that used when he made his initial purchase. Of course, if the price had fallen 2 cents he would have lost \$50 before commissions.

In Chapters I and II the emphasis rests primarily on the open-end position, especially outright purchase of a commodity future in anticipation of a price rise. There are two basic reasons for this approach. The first reason is to facilitate description of the basic structure and mechanics of the futures market. Secondly, the net long position is generally more easily understood than the net short position.

However, the commodity spread is a somewhat more complex procedure and one with which the remainder of this thesis is concerned. Detailed discussion of spreading is given in Chapter III.

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<sup>1</sup> When percentage profits were calculated, the assumption was made that the speculator never had more than 8 cents per bushel invested. This profit figure is also gross profits before commission. At the time of writing the commission on 5,000 bushels of wheat is \$22 in United States funds.



## CHAPTER III

### SOME ASPECTS OF THE THEORY AND ANALYSIS OF COMMODITY SPREADS

#### Spreading Described

Spreading involves simultaneously purchasing one futures month and selling another. When a speculator enters into a spread position, he expects that the price of the future he buys will rise relative to the price of the future he sells. For instance, if he expects the price of May soybean meal to rise relative to October soybean meal, he will purchase a given number of May contracts and sell an equal number of October contracts. He is not concerned with the absolute prices of the two contracts but with the relative prices of the May and October contracts. Suppose that he is able to buy one May soybean meal contract at \$70 per ton and sell one October soybean meal contract for the same price. The difference in price (or spread) between these two futures is zero. If, in time, the price of the May future goes to \$75 and the price of the October future goes to \$71, the speculator makes \$5 per ton on the May future and loses \$1 per ton on the October future. Therefore, he has a net gain of \$4 per ton. Since a contract of soybean meal consists of 100 tons, he experiences a profit of \$400 on his spreading operation (before commissions). On the other hand, if the speculator initially expects that the price of the May future will fall relative to the price of the October future, he will sell the May future and buy the October future. Given the price changes above, he will lose \$400 per contract (plus commissions).



## Intertemporal Allocation and Carrying Charges

One highly important fact recognized by the commodity spreader is the dependence upon one another of individual futures months traded on a futures market. The futures market, in fact, offers a means of effecting the intertemporal allocation of scarce goods.<sup>1</sup> Consideration is given to the problem of allocating stocks of wheat between two different crop years and involving the Chicago May and July wheat futures. The July future is generally considered to be the first future in the new crop year. Consider the allocation problem which would arise should news in April indicate that the new crop would be smaller than originally anticipated. The impending shortage would tend to lead to a rise in the price of wheat to be delivered in July, that is, a rise in the July futures price.<sup>2</sup> Grain merchants with wheat in store would find it to their advantage to sell their wheat in the July and other new crop futures, while the reluctance of merchants to sell old crop wheat would tend to cause an increase in the price of old crop futures. The type of behavior exemplified here might be expected to continue until the July future was priced above the May future by an amount equal to the cost of storing grain from May to July. This cost of storage is known to the grain trade as the carrying charge or carrying cost and is generally considered to consist of interest, insurance, and physical storage costs.<sup>3</sup>

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<sup>1</sup> Holbrook Working, "The Theory of the Inverse Carrying Charge in the Futures Market," Journal of Farm Economics, XXX (February 1948), 16.

<sup>2</sup> Holbrook Working, "The Theory of the Price of Storage," American Economic Review, XXXIX (December 1949), 1254-1262.

<sup>3</sup> Board of Trade of the City of Chicago, op. cit., p. 174.



Similar arguments and examples may be used to illustrate the point that all futures of a given commodity are tied together by the thread of carrying charges.<sup>1</sup> This linkage has implications for spreads not found in open-end positions. Several researchers including Grey, Working, Telser, and Houthakker have tested for randomness in futures prices.<sup>2</sup> They appear to agree that there are some non-random elements in futures prices (which is tantamount to saying that futures prices are, in part, predictable). But it also appears that much of the movement in futures prices is in response to randomly occurring news. If futures are, in fact, forced to move together due to the link provided by carrying charges, the two futures involved in a given commodity spread should tend to move together in the face of randomly occurring news.<sup>3</sup> Therefore, spreads should be affected less by randomly occurring factors than should open-end positions.<sup>4</sup>

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<sup>1</sup> There is a tacit assumption here that the commodity in question is storable, which is not always the case. Cattle, for instance, hold limited storage potential. Neither is it contended that carrying charges need always be positive. It is possible (in the case of a nearby shortage) for nearby futures to be priced higher than distant futures, forming what is known as an inverse carrying charge. See Holbrook Working, "The Theory of the Inverse Carrying Charge in the Futures Market," Journal of Farm Economics, XXX (February 1948), 1-28.

<sup>2</sup> Roger W. Grey, "The Search for a Risk Premium," Journal of Political Economics, LXIX (June 1961), 250-260. Holbrook Working, "The Investigation of Economic Expectations," American Economic Review, XXXIX (May 1949), 150-166. Lester G. Telser, "Futures Trading and the Storage of Cotton and Wheat," Journal of Political Economics, LXVI (June 1958), 233-255. Hendrick S. Houthakker, "Systematic and Random Elements in Short Term Price Movements," American Economic Review (May 1961), 164-172.

<sup>3</sup> These random disturbances include such factors as crop and war scares, errors in statistical reporting, and so on.

<sup>4</sup> The degree to which futures prices for the same commodity move together in the face of new information is of obvious importance. Working's research into this problem indicates that they each tend to move a constant percentage in the same direction with the advent of new information. See Holbrook Working, "The Theory of the Price of Storage," American Economic Review, XXXIX (December 1959), 1255.





Rather than attempting to analyze fundamental and technical conditions, both of which may be subject to random disturbances, the spreader looks at the relationship between two futures.<sup>1</sup> Hence the spread analyst is not so much concerned with supply and demand per se as with relative supplies of, and demands for, different commodity futures and the extent to which delivery in one future can substitute for delivery in another. The discussion above does not necessarily imply that the spread analyst will experience less difficulty in catching the market in a discounting error than the open end analyst. However, the likelihood seems less that (once the spread analyst discovers an error), he will find conditions change radically from his expectations.

#### Spreads and Random Behavior

The above points notwithstanding, there are certain conditions that can impart randomness into spread speculation. One of these is the (frequently) unpredictable revision of interest rates. If interest rates increase, carrying costs for grain are expected to increase. Therefore, subsequent increases in the premiums paid for delivery in distant months are also expected. Thus if a speculator has sold a distant month and purchased a near month, he can be expected to lose money, at least relative to what he would have made if interest rates had remained constant. Also any factor that makes substitution of trade in one future for trade in another future impossible could break the

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<sup>1</sup> Some evidence in support of the argument that spreads are less likely to exhibit random movement is found in the fact that the margins charged speculators entering into spread positions are generally less than those required for open end positions.



bond carrying charges form between futures. An occurrence on September 30, 1968, and the following few months provides an example of such a factor. Until that date the nearby soybean meal futures had been falling relative to distant soybean meal futures.<sup>1</sup> On the last day of September the American East coast dockworkers went on strike. In response, the United States President, Lyndon B. Johnson, invoked the Taft-Hartley law requiring the strikers to return to work for at least 80 days. The market apparently expected work stopages to resume after the expiry of the Taft-Hartley injunction. Realization of this expectation would mean that anyone wishing to export soybean meal for some time to come would have to do so while the Taft-Hartley injunction was in effect. Therefore, there was an extremely heavy demand for soybean meal for immediate shipment. The October future was the only one that required delivery during the period affected by the Taft-Hartley injunction. Consequently, the October soybean meal future rose sharply in price relative to the other soybean meal futures. This case represents one instance where substitution between futures is made difficult by unpredictable or nearly unpredictable circumstances.<sup>2</sup>

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<sup>1</sup> Soybean meal is generally not considered to have a carrying charge per se, since it is storable for only about two weeks. However, intertemporal allocation of soybean meal is likely accomplished through the storage of soybeans from which the meal is derived.

<sup>2</sup> The word "difficult" rather than "impossible" was used here because at some price other deliveries were probably substituted for the October future. This substitution would occur at the price or prices at which exporters found it profitable to buy their way out of export commitments or forego conducting export business to which they were not already committed. Thus although substitution between the October and other futures may have occurred, it was done for a reason which likely would not have been anticipated by the spread analyst.



Spreads perhaps do not offer profit opportunities as attractive as those offered by open end positions. However, it is possible that profit opportunities existing in spreads might be more readily capitalized upon because of the lesser amount of random movement present in them. For this reason and because economic theory offers certain tools possibly applicable to spread analysis, the following chapters concentrate on the development of a model to predict directional movements in commodity spreads.



## CHAPTER IV

### THE FRAMEWORK AND DEVELOPMENT OF THE MODEL

#### A Digression into Conventional Economic Theory

Spreading of commodity futures usually involves two futures deliverable in different time periods. Hedgers or speculators have the opportunity to consider several delivery months at a given point in time and to choose whichever of these best meets their needs. Hedgers look at the utilities of making or taking delivery at future dates, presumably discounting these utilities to the present, and deciding which futures best suit their plans of operation. Once they have discounted these utilities, hedgers essentially treat them as separate and distinct goods. The speculator attempts to estimate the utilities attached to the futures under consideration and profit from his estimates.

Economic theory provides guidance in the formal treatment of goods with different utilities. Reference to a standard economic text shows that if assumptions are made concerning the existence and convexity of indifference curves, a theoretical model can be developed which delineates the behavior of utility maximizing consumers.<sup>1</sup>

Lagrangian and other techniques can be used to show that a consumer will be at equilibrium and maximize utility when he purchases quantities of goods (say  $X_1$  and  $X_2$ ) such that the ratio of their quantities is equal to the inverse ratio of their respective prices. Thus the following equation is derived:

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<sup>1</sup> For instance see C. E. Ferguson, Microeconomic Theory (Homewood, Illinois: Richard D. Irwin, Inc., 1966), pp. 23fn, 34fn.





$$\frac{QX_2}{QX_1} = \frac{P_1}{P_2} ,$$

where  $QX_1$  is the quantity of one good purchased, and  $QX_2$  is the quantity of another good purchased, and  $P_1$  and  $P_2$  are their respective prices.<sup>1</sup>

There is an apparent similarity between the hedger (who bases his decision to make or take delivery in different futures on discounted utilities) and the hypothetical consumer in economic theory who substitutes good  $X_1$  and  $X_2$  along an indifference curve. Prices such as  $P_1$  and  $P_2$  are provided in the futures market in the form of quotations for various futures. In the futures market, if estimates of  $QX_1$  and  $QX_2$  are available, speculators can look at these quantity estimates and compare them to the prices of the two futures of interest to see if they are consistent with market equilibrium. If  $QX_2/QX_1$  is not equal to  $P_1/P_2$ , the market is not in equilibrium, and speculators can capitalize on it.

The validity of the statement above is conditional upon estimation of quantities traded in the futures market. A subset of futures price prediction methods (known as volume and open interest analysis), offers a possible means of making these estimates.

#### Traditional Volume and Open Interest Analysis

The term volume represents the addition of successive futures transactions, that is, the total number of trades taking place in a

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<sup>1</sup> Economic theory also shows that profit maximizing producers will purchase quantities of inputs in inverse proportion to their respective prices. Ibid., p. 156fn, 158fn.



given period of time (usually one day).<sup>1</sup> Thus the trade of one contract of wheat increases volume by one unit. Open interest is the summation of the number of long contracts held at any point in time.<sup>2</sup> A new wheat contract purchase serves as an illustration. The new purchase requires that there be a seller of 5,000 bushels of wheat. However, only the long side of the transaction is counted in finding open interest. Thus for the case mentioned, 5,000 bushels are added to open interest figures. Volume and open interest figures are calculated daily by commodity exchange officials and are usually presented in the financial press by delivery month. Totals for all futures are often given as well.

Analysts who use volume and open interest analysis believe that changes in volume and open interest serve as a market barometer. Speculation over the years has led to the development of four axioms that volume and open interest analysts follow. These axioms are listed and discussed in turn.<sup>3</sup>

#### Rising Prices and Rising Volume and Open Interest Foretell Further Price Rises

With reference to the first axiom, new export business may be reflected in the futures market before it is announced publicly. Suppose

<sup>1</sup> Modern communications and accounting devices in use today permit acquisition of volume figures within a few minutes from the time they become fact. However, the volume figures presented in the financial press are usually presented on a daily basis.

<sup>2</sup> Hypothetically there is a certain open interest for any contract at a given point in time. However, open interest statistics are compiled only after the close of trading each day. The possibility exists for the use of computer facilities to provide these statistics continuously throughout the day. Preclusion at this time may be due to the expenses involved outweighing the direct benefits derived from this potential innovation.

<sup>3</sup> Commodity Research Bureau, Guide to Commodity Price Forecasting (New York, New York: Commodity Research Bureau, 1965), pp. 61-73.



in the month of March a foreign trade delegation quietly approaches Cargill and offers to buy a large quantity of wheat for delivery in September.<sup>1</sup> Cargill may begin to buy wheat in the September (and other) futures because they wish to place long hedges. Their purchases would tend to drive futures prices up (*ceteris paribus*). If prices had been falling up to that point along with volume and open interest, this decline would indicate that the market had had speculators who had been long wheat futures and waiting for a price rise which never materialized, and who might be expected to abandon their positions in wheat and search for more attractive profit possibilities. As these tired longs sell off their wheat contracts, open interest and volume would probably fall. With the entrance of Cargill, wheat futures prices would rise and so would volume and open interest. Such circumstances probably have led to the development of the first axiom.

A Rise in Futures Prices in Conjunction with Falling Volume and Open Interest Means that Prices will Fall in the Future

The price, volume, and open interest behavior described in the second axiom could occur in the case where short hedgers are lifting their hedges. Suppose that flour millers purchase large inventories of grain early in the year at favorable prices and hedge by selling futures short. Later in the year wheat prices begin to rise (perhaps because of Cargill's export business in the example above). Due to this price rise the flour millers decide to defer purchases of wheat in hopes of a price decline. In the meantime, they will work out of their stocks. As their stocks of wheat decline, they must lift

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<sup>1</sup> Cargill is one of the largest grain exporters in the U.S.



their hedges. Every time they mill 5,000 bushels of wheat, they no longer need to have that wheat hedged. Every time they buy back a futures contract, someone who was previously long must sell a contract. Thus open interest declines by 5,000 bushels. As the millers cover their hedges, prices may tend to rise. However, they are lifting hedges because they are working out of stocks. For a limited time, at least, a lack of demand is implied, which in turn implies that falling prices are to come. This case provides an example in which the second axiom could hold true.

Falling Futures Prices Occurring with Rising Volume and Open Interest Forebode a Further Price Decline

The behavior described in the third axiom could occur when there has been extremely heavy selling, possibly by both hedgers and speculators. Apparently the implication here is that happenings in the past will be repeated.

Falling Prices, Acting with a Decline in Volume and Open Interest, are Predictive of an Increase in Prices

Axiom number four apparently implies that the market has been oversold. If the market is oversold, the price is by definition below equilibrium. If overselling has occurred and the market tends toward equilibrium, the price must rise. Therefore, the fourth axiom will hold true in this case.

The axioms presented above indicate to the writer that volume and open interest are analogs of quantity demanded and supplied in the futures market.<sup>1</sup> The model developed in this work re-casts this notion as a formal assumption. Even assuming that volume and open interest

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<sup>1</sup> See footnote 3, page 9.





statistics are representative of supply and demand, their use in predicting absolute price levels presents some problems. These problems are discussed below within the context of economic theory and then related to commodity futures speculation.

The positions of the supply and demand schedules relative to each other must be known to determine whether the price of a given commodity is in equilibrium. Given the location of these schedules, their intersection can be found and thus the price and quantity consistent with this intersection. Without knowledge of these schedules all that can be determined is that trade of a certain commodity has taken place at a certain price. Supply and demand are always equal in the indential sense, but there is no assurance that a trade has taken place at the equilibrium price or otherwise.

The same type of problem occurs if volume and open interest data are to be used as a proxy for quantities traded in the futures market. The number of longs in the futures market must always equal the number of shorts. However, without knowledge of the location of the supply and demand schedules for a future, the equilibrium price cannot be determined. Further, even if the analyst knows where the two schedules lie at a given moment, and therefore where the trading price is relative to the intersection of these curves, he still has no ad hoc reason for believing that these curves will remain stationary. The supply and demand schedules for futures contracts are probably subject to rapid and unpredictable shifts. For instance, consider the sharp increase in demand for futures contracts caused by the exports undertaken by Cargill in the example presented earlier. If demand and supply



curves do shift in the futures market due to unpredictable factors, the analyst is still on shaky ground. Suppose a speculator knows where the demand and supply schedules for a wheat contract lie at a certain point in time. Assume also that the price of that future is above the intersection of supply and demand schedules for that future. He therefore sells short. Upon the entry of Cargill the demand for futures contracts shifts to the right so that the supply and demand curves intersect at a price higher than that at which the speculators sold short. If the price moves toward equilibrium (toward the new intersection), he will lose money.

Volume and open interest statistics offer a means of predicting movements in commodity futures prices. However, a way must be found to reduce losses occurring due to (unpredictable) supply and demand shifts.

### The Model

The core of this thesis and this model arise from a comment made by Malinvaud.

The model [a perfectly competitive, intertemporal allocation model] is based on the assumption that, for each commodity and each point in time, there is a market where supplies and demands implied by the present plans for this commodity and this time manifest themselves already now. Future (sic.) markets provide a good concrete example of this abstract notion.<sup>1</sup>

The phrase, "for each commodity for each point in time," holds within it an important implication. For each commodity traded in the futures market (wheat, for example), there are several futures months for which

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<sup>1</sup> E. Malinvaud, "Interest Rates in the Allocation of Resource," The Theory of Interest Rates, ed. Hahn and Brechling (New York: Macmillan, 1964), p. 217.



trading takes place. The idea of treating the same product in different time periods as different products is not a new one. The possibility exists that different futures months could be treated as different commodities. Wheat to be delivered in March is, in fact, different from wheat to be delivered in July. The wheat to be delivered in each month is, of course, the same commodity. However, the conditions governing prices in different futures months vary. Firstly, as shown by Working, wheat to be delivered in one month is different from wheat to be delivered in another month due to the carrying charge involved in storing it.<sup>1,2</sup> The utilities of the more distant months can presumably be discounted to the present by subtracting the carrying charges involved. Secondly, given that the utilities of various futures are discounted to the present by subtracting carrying charges, the individual futures could have different time utilities even after the discounting has been done. One point, however, stands out. If two futures are tied together by carrying charges, as Working contends, and if one future is substituted for another in a manner governed by carrying charges, then a shift in the demand for (or supply of) one future will result in a comparable shift in the other futures being traded at the same time. This point offers a solution to the problem brought out at

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<sup>1</sup> Holbrook Working, "The Theory of Inverse Carrying Charges in the Futures Market," Journal of Farm Economics, XXX (February 1948), 1-28.

<sup>2</sup> From this point on consideration will be given only to spreads within the same commodity on the same market. The effect of carrying charges on spreads between different commodities and markets is probably minor.



the end of the last section concerning the difficulties occasioned by supply and demand shifts caused by unpredictable factors. If a shift in demand or supply occurs in one future, it will also occur in the other futures trading. Otherwise, if, the demand for one future shifts to the right without the demand for other futures shifting, the price of one future will rise without the prices of other futures rising (all other things being equal). Such price behavior would be inconsistent with Working's point that the prices of different futures cannot differ by an amount more than that called for by the price of storage, assuming that the relative discounted utilities of the two futures remain the same after the shift as before. If, as pointed out above, a shift in the supply and demand schedules for one future leads to a comparable shift in the other futures trading, then a great deal of the random price behavior in futures could be eliminated by considering relative rather than absolute changes in futures prices.<sup>1</sup>

The commodity spreader, in fact, attempts to estimate relative utilities of two futures months and attempts to profit from any errors the market makes in adjusting prices to be consistent with these relative utilities. Two problems in commodity futures speculation have (at least in part) been solved through the synthesis of two important

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<sup>1</sup> A subtle difference exists between the price of storage and the carrying charge. The carrying charge is cost of storing a commodity, and includes interest, real storage costs, and insurance. The price of storage includes carrying charges plus or minus the premium or discount put on a future due to different time utilities. Working, op. cit., pp. 1-28.

<sup>2</sup> This conclusion depends on the assumption that substitution between futures is possible. In some cases, such as the dock worker's strike discussed in Chapter III, substitution is made impossible.





ideas. The first of these ideas is that randomness will be greatly reduced by the speculator considering spreads rather than open end positions. Secondly, economic theory, through the indifference relation, offers a means of determining whether two or more substitutable futures are in equilibrium with one another, given the assumption that volume and open interest (combined) are estimates of quantities demanded and supplied in the futures market.

Consider the following equation defining the behavior of the profit maximizing producer and utility maximizing consumer at equilibrium:

$$\frac{QX_2}{QX_1} = \frac{P_1}{P_2} ,$$

where  $QX_2$  is the quantity of good  $X_2$  purchased,  $QX_1$  the quantity of good  $X_1$  purchased,  $P_2$  the price of good  $X_2$ , and  $P_1$  the price of  $X_1$ . Rather than two commodities, let  $X_1$  and  $X_2$  be two different futures contract months. Also let  $P_1$  and  $P_2$  be the discounted prices of two different futures months. Further assume that  $QX_1$  and  $QX_2$  are equal to the sum of volume plus open interest for the two futures  $X_1$  and  $X_2$ , respectively.<sup>1</sup> Given the last assumption,  $QX_1$  and  $QX_2$  may be treated exactly as quantities of commodities are treated in traditional economic theory. The

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<sup>1</sup> The veracity of simply adding volume and open interest to obtain estimates of quantities traded in the futures market is open to question. There are, for example, cases where prices changed with changes in volume but not in open interest. On the other hand, both volume and open interest may change with prices on occasion. Therefore using the linear sum of volume and open interest as a quantity estimate is an arbitrary decision. Perhaps "better" estimates would have resulted if twice the volume had been added to open interest, or if open interest alone had been used and so on. The wisdom of adding volume and open interest is, in fact, tested when the model currently being developed is tested.



equilibrium defining equation may be rearranged in the following manner:

$$\frac{QX_2}{QX_1} - \frac{P_1}{P_2} = 0,$$

where  $P_1$  is the price of the near futures month,  $P_2$  is the price of the distant futures month,  $QX_1$  is the sum of volume plus open interest recorded for the near month and  $QX_2$  is the sum of volume and open interest for the distant month, all statistics being recorded on the same given day. If the assumptions made above hold, and producers and consumers optimize their behavior in a manner consistent with the equation above, the market can be said to be in equilibrium when  $(QX_2/QX_1 - P_1/P_2)$  is equal to zero. In other words, if the right side of the equation above is equal to zero, the market has discounted the available information perfectly. If the arithmetical difference above is not equal to zero, the market is not in equilibrium but can be expected to move toward equilibrium if the participants are rational in the economic sense.<sup>1</sup> Specifically if  $(QX_2/QX_1 - P_1/P_2)$  is greater than zero,  $P_1$  must increase relative to  $P_2$ ;  $QX_2$  must increase relative to  $QX_1$  or both. The converse is true if the difference above is less than zero. The ratio  $P_1/P_2$  is of interest. Although commodity spreads are usually treated as the arithmetic difference between the prices of two futures, they could just as well be treated as the ratio of one futures price to the other. Thus if the market is not in equilibrium (as defined in the equation above), the spreader can take advantage of the fact that the price ratio  $P_1/P_2$  will probably change as the market

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<sup>1</sup> Rationality is conditional upon the availability of information and financial viability of market participants.



tends toward equilibrium. If  $QX_2/QX_1 - P_1/P_2$  is less than zero, the implication is that the price of month  $X_1$  will fall relative to the price of month  $X_2$ . Therefore, the speculator will sell month  $X_1$  and buy month  $X_2$ . As the market tends toward equilibrium, he will profit. If  $QX_2/QX_1 - P_1/P_2$  is greater than zero, the implication is that  $P_1$  will rise relative to  $P_2$ . The speculator will buy the near month and sell the distant month. In both cases described the speculator will offset his initial position when the difference between the two ratios above is equal to zero, since, at that point, the inference is that the two months that he spread are in equilibrium.

The effectiveness of the model developed on the previous pages as a predictor of the movements in commodity spreads depends on two main points: first, the extent to which the sum of volume plus open interest can be treated as analogous of quantities traded in theoretical economic models is of high importance. Secondly, the absolute size of the difference between  $QX_2/QX_1$  and  $P_1/P_2$ , which is required to indicate a "significant" amount of disequilibrium, must be found before the model can be put into practical use. As a matter of definition the difference between the two ratios above will be called the disequilibrium index and will be referred to as such in the pages that follow. The empirical study in this work is done in an attempt to resolve the questions raised above.



## CHAPTER V

### THE DATA AND DATA MODIFICATIONS

#### The Data Sources

Price, volume, and open interest data were collected for six commodities traded on the Chicago Board of Trade. These were wheat, rye, corn, soybeans, soybean meal, and soybean oil. Data on all trading months for these commodities were taken for the years 1958 through 1968, where possible.<sup>1</sup> Observations were taken every two weeks on the 15th and last day of each month. Where these observations fell on weekends or holidays, the figures from the nearest Friday or nearest trading day were used. The major reason for taking data from the two dates mentioned above was that Commodity Futures Statistics from which much of the data was taken presents the required statistics only on the dates mentioned.<sup>2</sup> Although a randomly sited systematical sample might have been preferable to the sample used, the fact that many of the data

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<sup>1</sup> Two exceptions here are August soybean meal and August soybean oil. Neither of these contracts traded prior to 1962. Also where spreads involving two calendar years were tested, only ten years of comparisons were possible. For instance, with the November over January soybean spread, the possible spreads went as follows: November 1958 against January 1959, up to November 1967 against January 1968. Since data from 1969 were not collected, the spread November 1968 against January 1969 could not be considered.

<sup>2</sup> United States Department of Agriculture, Commodity Exchange Authority, Commodity Futures Statistics, Statistical Bulletin Nos. 239, 256, 274, 302, 323, 338, 352, 365, 382, 414, 432 (Washington, D.C.: U.S. Government Printing Office, 1957/58, 1958/59, 1959/60, 1960/61, 1961/62, 1962/63, 1963/64, 1964/65, 1965/66, 1966/67, 1967/68), tables 13, 15, 16, 16, 16, 16, 16, 15, 15, 17, 17 (respectively).





used was available only for the 15th and last day of the month made other types of sampling virtually impossible. In cases where closes were expressed as a price range, the simple mean of the two prices was used. Table 1 gives some pertinent data concerning the futures traded for these commodities. Table 2 shows the months in which the commodities of concern are traded for delivery. Three publications were used as data sources. Commodity Futures Statistics provided price and open interest data for the period running from January 15, 1958, through June 30, 1968.<sup>1</sup> Price and open interest data after June 30, 1968, are taken from the Wall Street Journal.<sup>2,3</sup> Volume data occasioned somewhat more difficulty. These are available in the Kansas City Grain Market Review for wheat, corn, and soybeans for the period January 15, 1958, through December 31, 1965.<sup>4</sup> For the period January 15, 1966, to December 31, 1968, volume figures for the same commodities mentioned above are found in the Wall Street Journal.<sup>5</sup>

For some reason the trade publications cited do not publish detailed volume figures for rye, soybean oil, or soybean meal. Total monthly volume figures for these goods are published in Commodity Futures

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<sup>1</sup> Ibid., Tables 10, 12, 13, 13, 13, 13, 13, 12, 12, 14, 14 (for respective years).

<sup>2</sup> "Futures Prices," Wall Street Journal (June 30, 1968 - December 30, 1968), various pages.

<sup>3</sup> "Volume and Open Interest," Wall Street Journal (June 30, 1968 - December 30, 1968), various pages.

<sup>4</sup> Kansas City Grain Market Review (January 15, 1958 - December 31, 1965), p. 2.

<sup>5</sup> "Volume and Open Interest," Wall Street Journal (January 15, 1966 - December 31, 1968), various pages.



Table 1  
DATA CONCERNING COMMODITIES TRADING ON THE CHICAGO BOARD OF TRADE, STUDIED 1969

Commodity	Contract Size	Minimum Allowable Price Change	Maximum Allowable		Non-Member Spread Commission Per Contract	Maintenance Margin (Spreads)	Original Margin (Spread)
			Daily Price Change				
Wheat <sup>1</sup>	5,000 bushels	1/8¢/bushel	10¢/bushel		\$30.00	\$250.00	\$250.00
Corn	5,000 bushels	1/8¢/bushel	10¢/bushel		\$30.00	\$150.00	\$150.00
Rye	5,000 bushels	1/8¢/bushel	10¢/bushel		\$30.00	\$150.00	\$150.00
Soybeans	5,000 bushels	1/8¢/bushel	10¢/bushel		\$30.00	\$150.00	\$150.00
Soybean Meal	100 tons	5¢/ton	\$5.00/ton		\$40.00	\$150.00	\$250.00
Soybean Oil	60,000 pounds	1/100¢/pound	1¢/pound		\$40.00	\$150.00	\$250.00

<sup>1</sup> All contracts traded on the Chicago Board of Trade mature on the day prior to the seventh last business day on the contract.



Table 2  
DELIVERY MONTHS BY COMMODITY, CHICAGO BOARD OF TRADE, 1969

Commodity	Month				
Wheat	March	May	July	September	December
Corn	March	May	July	September	December
Rye	March	May	July	September	December
Soybeans	January	March	May	July	September
					November
Soybean Meal	January	March	May	July	August
					September
Soybean Oil	January	March	May	July	August
					September
					October
					December



<sup>1</sup>  
Statistics. Estimated daily volume was obtained by dividing total monthly sales for a given future by 30. Estimates of this type are always open to question. However, to the author's best knowledge, the actual daily volume figures are only available at high cost. Even these estimates could not be made for the entire time period considered since the Wall Street Journal does not publish the required figures at all and Commodity Futures Statistics was available only up to June 30, 1968. Because of this lack of data, estimation of volume figures for the period from June 30, 1968, through December 31, 1968, was necessary.

From the beginning of each contract until June 30, 1968, open interest figures were available, and daily volume estimates had been made as described above. These daily volume estimates were then divided by open interest to find the relative magnitude of these quantities during the period for which volume and open interest were available. The resulting ratios were found to be relatively constant and were therefore averaged. This average was then multiplied by open interest figures for the period after June 30, 1968, to obtain volume estimates for that period.

Volume usually makes up roughly 2 percent of open interest. Since in the analysis described in the following chapter volume is added to open interest to give estimates of quantities traded in the

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<sup>1</sup> United States Department of Agriculture, Commodity Exchange Authority, Commodity Futures Statistics, Statistical Bulletin Nos. 239, 256, 274, 302, 232, 338, 352, 365, 382, 414, 432 (Washington, D.C.: U.S. Government Printing Office, 1957/58, 1958/59, 1959/60, 1960/61, 1961/62, 1962/63, 1963/64, 1964/65, 1965/66, 1966/67, 1967/68), tables 4, 4, 4, 4, 4, 4, 4, 4, 4, 4 (respectively).





futures market, any bias caused by this estimation procedure would likely be small. In addition, these estimates are necessary only for three of the six commodities considered and only for those contracts trading after June 30, 1968.

#### Data Selection and Modification

Before actual computations using the collected data were done, data adjustments were carried out to make the data more useful for application to the empirical model. Two adjustments were made: the first for seasonality, the second to correct for price differences due to carrying charges.

To illustrate adjustment for seasonality, the following example is used. Average December United States soybean meal production for 1958 through 1967 was 966.7 thousand tons. The corresponding July figure is 835.7 thousand tons. Evidently December meal consumption is greater than July soybean meal consumption. As a result, December soybean meal production is also greater than that for July. Given the argument that the futures market acts to allocate supplies of commodities over time, there is no reason for the price of soybean meal in December to be any lower than the price of soybean meal in July, even though production of soybean meal in December exceeds that in July.<sup>1</sup> However, if volume and open interest figures are to be substituted into the equation

$$\frac{QX_2}{QX_1} = \frac{P_1}{P_2} ,$$

and if volume and open interest figures correspond seasonally to actual

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<sup>1</sup> Carrying charges are ignored here.



soybean production, the volume and open interest data must be corrected to remove seasonality.<sup>1</sup> Otherwise bias would automatically be introduced into the disequilibrium index calculated by use of the equation above. The method of data adjustment, using soybean meal as an example, is as follows. Mean soybean meal production figures for the respective months under consideration are used. More specifically, use of the September and October figures above render the ratio  $716.9/931.7$ , which reduces to  $.77$ . Each spread under consideration has a similar ratio that, when applied to volume and open interest data, permits adjustment for seasonality. In the case of the September over October soybean meal spread, the volume and open interest data for October would be multiplied by  $.77$ . Table 3 presents the actual weights applied to the spreads tested.

The second data modification concerns allowance for carrying charges. Conventional economic theory relevant to the indifference relation normally deals with substitution among goods at a given point in time. For example, apples which exist today are substituted for oranges today. However, as pointed out earlier, commodities traded for delivery in successive futures months are different, in fact, in that their prices are separated by carrying charges. Therefore, to

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<sup>1</sup> The tacit assumption that volume and open interest in respective futures months should be correlated with actual cash trade in the commodity in question is based on concepts outlined by Working. He contends that survival of futures trading in a given commodity necessitates hedger participation in substantial amounts. If hedgers do place hedges in response to anticipated cash business, the conclusion that volume and open interest figures would correspond quite closely to the actual volume of cash trade may be reached. See Holbrook Working, "New Concepts Concerning Futures Markets and Prices," American Economic Review, LII (May 1962), 431-459.



Table 3

LISTING OF SPREADS TESTED FOR COMMODITIES STUDIED AND  
WEIGHTS USED TO ADJUST FOR SEASONALITY

Commodity	Spreads and Applicable Weights											
	Mar/May	Mar/July	Mar/Sept	Dec/Mar <sup>1</sup>	May/July	May/Sept	May/Dec	July/Sept	July/Dec	Sept/Dec		
Wheat	1.0	.32 <sup>2</sup>	.60	1.0	.30	.55	1.0	1.85	3.5	1.85		
Corn	May/May	Mar/July	Mar/Sept	Dec/Mar	May/July	May/Sept	May/Dec	July/Sept	July/Dec	Sept/Dec		
	1.0	1.0	1.45	1.0	1.0	1.44	1.0	1.3	1.0	1.45		
Soybeans	Jan/Mar	Jan/May	Jan/July	Mar/July	May/July	July/Sept	Aug/Sept	Aug/Nov	Sept/Nov	Nov/Jan <sup>1</sup>		
	1.0	1.0	1.0	1.0	1.0	1.0	.80	.66	.54	1.45		
Soybean Oil	Jan/Mar	Jan/May	Jan/July	Mar/July	July/Sept	Aug/Oct	Aug/Dec	Sept/Oct	Oct/Dec	Dec/Jan <sup>1</sup>		
	1.0	1.0	1.0	1.0	1.2	1.0	.88	.77	1.0	1.0		
Soybean Meal	Jan/Mar	Jan/May	Jan/July	Mar/July	July/Sept	Aug/Sept	Aug/Dec	Sept/Oct	Oct/Dec	Dec/Jan		
	1.0	1.0	1.0	1.0	1.2	1.2	.86	.77	1.0	1.0		

continued ...



Table 3 (continued)

Commodity	Spreads and Applicable Weights									
	Mar/May	Mar/July	Mar/Sept	Dec/Mar	May/July	May/Sept	May/Dec	July/Sept	July/Dec	Sept/Dec
Rye	.65	.34	.33	1.2	.50	.5	1.3	1.0	2.5	2.5
Source: <u>Wheat</u>	Commodity Research Bureau, "Receipts of Wheat at Principal Markets of the United States 1958-1967," <u>Commodity Year Book, 1968</u> (New York: Commodity Research Bureau), p. 365.									
<u>Corn</u>	Commodity Research Bureau, "Receipts of Corn at 13 Primary Markets in the United States, 1958-1967," <u>Commodity Year Book, 1968</u> (New York: Commodity Research Bureau), p. 125.									
<u>Rye</u>	Commodity Research Bureau, "Receipts of Rye at Principal Markets of the United States, 1958-1967," <u>Commodity Year Book, 1968</u> (New York: Commodity Research Bureau), p. 318.									
<u>Soybeans</u>	Commodity Research Bureau, "Soybeans Exports from the United States," and "Soybeans Crushed in the United States, 1958-1967," <u>Commodity Year Book, 1968</u> (New York: Commodity Research Bureau), p. 318. (The sum of exports and soybean crushings were used to obtain an estimate of total soybean consumption in any given month.)									
<u>Soybean Meal</u>	Commodity Research Bureau, "Production of Soybean Cake and Meal in the U.S. 1958-1967," <u>Commodity Year Book, 1968</u> (New York: Commodity Research Bureau), p. 307.									
<u>Soybean Oil</u>	Commodity Research Bureau, "Crude Soybean Oil Produced in the United States, 1958-1967," <u>Commodity Year Book, 1968</u> (New York: Commodity Research Bureau), p. 311.									

<sup>1</sup> All spreads, except those footnoted, are between futures trading in the same calendar year. The exceptions, such as December over March wheat, are in two different years.

<sup>2</sup> In all cases weights are applied to the distant month; for example, for March over July wheat, the sum of July open interest and volume multiplied by .32 before disequilibrium index is calculated.





make distant months comparable to nearby months, estimated carrying charges are subtracted from the distant months.<sup>1</sup> Table 4 gives monthly carrying charges used in performing price data adjustment.

Table 4

CARRYING CHARGES USED IN THE CALCULATION OF  
DISEQUILIBRIUM INDEX FOR COMMODITIES TESTED

Commodity	Carrying Charge
Wheat	1.5 cents per month per bushel
Corn	1.5 cents per month per bushel
Rye	1.5 cents per month per bushel
Soybeans	1.5 cents per month per bushel
Soybean Meal	nil <sup>a</sup>
Soybean Oil	10 cents per hundredweight per month

<sup>a</sup> Soybean meal is usually not considered to be storable for more than about two weeks since it rapidly turns rancid. Thus if it is not storable no carrying charge should be applied to it. However, soybean meal can be stored in the form of soybeans, and it may be that a kind of proxy carrying charge does exist for soybean meal.

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<sup>1</sup> Subtraction of carrying charges appears to be conceptually identical with discounting procedures applied to future cash flows to determine their present value for comparative purposes.



The March 1964 over May 1964 Chicago rye spread is considered for illustration purposes. On June 15, 1964, the following data are recorded for the futures contracts in question.

March Chicago Rye      Price--137.0<sup>1</sup>      Volume--58      Open Interest--474

May Chicago Rye      Price--135.7      Volume-- 8      Open Interest-- 25

The carrying charge usually used for grains is 1.5 cents per month per bushel.<sup>2</sup> Thus to store grain from the first of March through the end of May would cost approximately 4.5 cents per bushel.<sup>3</sup> Taking the ratio  $P_1/P_2$  gives  $137.0/(135.7-4.5) = 1.044$ . In estimating  $Q_2/Q_1$ , volume and open interest were summed for March to get  $Q_1 = 532$ . The sum of volume and open interest for the May contract on that date was  $8 + 25 = 33$ . Referring to Table 3, the weight applied to this spread is .65. To estimate  $Q_2$ , the sum of volume and open interest for the May contract was multiplied by .65. Therefore,  $33 \times .65 = 21.45$ , which is the estimate of  $Q_2$ .

Taking computations further, the ratio  $Q_2/Q_1$  is given by  $21.45/532 = .040$ , and the disequilibrium index is given by

$$Q_2/Q_1 - P_1/P_2 = .040 - 1.044 = -1.004.$$

The data modification and computations described are basic to the analysis below.

<sup>1</sup> Normally fractional grain prices are expressed in eighths of a cent. Herein, however, fractional grain prices are expressed as base ten decimals according to the following convention:  $1/8$  cent = .1 cent,  $1/4$  cent = .2 cent,  $3/8$  cent = .4 cent,  $1/2$  cent = .5 cent,  $5/8$  cent = .6 cent,  $3/4$  cent = .7 cent, and  $7/8$  cent = .9 cent.

<sup>2</sup> The 1.5 cent carrying charge used is only approximate, however, it is the figure most frequently used by experienced price analysts. It probably varies from year to year, particularly in response to interest rates.

<sup>3</sup> Actually the May future expires around May 21, but deliveries (should they occur) take place in the remaining days of May. So almost a month's storage would be paid in May.



If equilibrium in the futures market can be defined within the context of the price and quantity ratios given above and the market tends toward such an equilibrium, the course of relative futures prices should be predictable on the basis of the sign and absolute magnitude of the disequilibrium indexes (such as -1.004 above). That is, if the disequilibrium index at a given point in time is non-zero, the implication is that the market is not in equilibrium. If the market is not in equilibrium and if it acts in a rational manner over time, then it should move to equate the two ratios mentioned above. In the preceeding example the disequilibrium index of -1.004 implies that the price of March rye will fall relative to the price of May rye, or the sum of volume and open interest for the May future should rise relative to the volume and open interest of the March future, or both.<sup>1</sup>

The commodities considered in this study were selected for several reasons. First, Canadian commodities such as those traded on the Winnipeg Grain Exchange were immediately excluded because, until the beginning of 1968, volume and open interest figures were not published by the Winnipeg Grain Exchange. Therefore, extensive data series for Canadian commodity futures trading are unavailable.

The Minneapolis and Kansas City exchanges were excluded because of the small number of commodities traded on them. The Chicago Mercantile Exchange was excluded for two reasons. First, extended data series for trading on that exchange are difficult and perhaps expensive to obtain;

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<sup>1</sup> The disequilibrium indexes and the price spreads for each spread considered are given in Appendix B. For the example above, in particular, spread and disequilibrium index vectors are given in Appendix B, Table 51.



secondly, the Chicago Mercantile Exchange trades primarily in commodities with low storability. These commodities, for example, include cattle, eggs, and pork bellies. The model developed above requires that buyers and sellers of commodities (particularly hedgers) have the opportunity to substitute trade in one month for trade in another month. At the outset it seemed likely that this type of substitution in cattle or eggs would be minimal. Some intertemporal substitution may take place in pork bellies; however, they are less storable than the commodities considered.

The Chicago Board of Trade, unlike the other exchanges, trades primarily in commodities with high storability, and data series over many years are readily available. Therefore, analysis is confined to commodities trading on that exchange. A subset of the group of commodities traded on the Chicago Board of Trade was selected. Those selected represent ones that enjoy large volumes of trading as well as being storable for extended periods of time.<sup>1</sup> The possibility of examining oats in the analysis was considered. However, the volume of trade in Chicago oats (along with U.S. production) has been declining over recent years. This factor may have made the oat market susceptible to manipulation.

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<sup>1</sup> The commodities are wheat, corn, rye, soybeans, soybean meal, and soybean oil as pointed out earlier.

<sup>2</sup> Market manipulation is illegal, and the laws pertaining to it appear to be strictly enforced. The primary method of control is the requirement that traders report any market commitments they have in excess of 200,000 bushels (in the case of oats). Further, no one may hold more than 2,000,000 bushels in any or all futures at any point in time. With relatively large amounts of trading taking place any one buyer or seller with a 2,000,000 bushel position is unlikely to affect the market appreciably. However, with the decrease in oat trading that has taken place, the impact of a 2,000,000 bushel trade could be substantial. In circumstances such as these, manipulations might be possible, even if the trader remains within the legal bounds set out by the Commodity Exchange Authority. For example, on December 8, 1968, open interest for the December 1969 Chicago oat contract was 3,805,000 bushels. A 2,000,000 bushel trade could have a substantial effect on a market with open interest that low.





Central to the model is the assumption that the market will eventually tend toward equilibrium. A manipulative attempt could cause the market to move continually away from equilibrium. For this reason the decision was made to exclude oats from the analysis.

Data for the commodities selected were punched on computer cards, and a program was written to calculate the disequilibrium index and spread vectors for each of the spreads given in Table 3 for the years 1958 through 1968.<sup>1</sup> The resulting vectors are presented in Appendix B. The revisions to the raw data described previously were also done by the same program. A third step performed by this program consisted of partial analysis of the spread and disequilibrium index vector.

#### The Pre-Analysis of the Data

Before describing the analytical stage, consideration is given to an implication arising out of the equilibrium concept of the model. Once the disequilibrium index becomes equal to zero, one of two events will occur. The index will stay approximately zero, or it will begin to move away from zero. In the former case there would be no point in the speculator showing any further speculative interest in that particular spread. In the second case the model suggests that the market is moving away from equilibrium after having reached it. The assumption is made that when the market moves away from equilibrium as measured by the disequilibrium index, this type of move would occur randomly and that particular spread would be of no interest to the profit maximizing

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<sup>1</sup> All computer analysis was done on an IBM 360/67 computer with the CP/CMS remote access facility, with the exception of the regression analysis described later on. It was done on the same computer but using the A.P.L. remote access facility and the University of Alberta's STATPAK stepwise regression program.



speculator. Therefore analysis of spread and disequilibrium index vectors is restricted to those observations in each vector occurring before the index became equal to zero. Table 5, presented to illustrate the pre-analysis, exemplifies this point. In the two vectors shown, analysis is restricted to those observations occurring before observation 18.

The first step in the pre-analysis (facilitated by the computer program) is a check on the vector of disequilibrium indexes which resulted from the initial calculations done by the program to select that disequilibrium index with the largest absolute value. This step is done by first setting an index range with high absolute values and seeing if an index falls within that range. In Table 5, for instance, the first range used is -1.5 to -1.4. Each disequilibrium index (for a given spread) is checked to see if it falls between those two figures. If the range is void, the next lowest absolute valued range is considered (for example, -1.4 to -1.3), and the selection procedure repeated. This procedure is continued until a range is found within which an index falls.<sup>1</sup>

The largest (in absolute value) disequilibrium index occurring for the spread in Table 5 is -0.957. Thus it falls in the range -1.0 to -.9. For convenience, rather than express ranges in terms of two figures

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<sup>1</sup> The first step the program takes in this section is to test the first disequilibrium index for each spread to see if it is negative or positive. If it is negative, the range is initially set between -1.5 and -1.4 and incremented upward toward zero until a disequilibrium index is found that falls into one of the ranges. If the first index is positive, the same procedure is used except that the first range is set at 6.2 to 6.1 and incremented downward toward zero. Disequilibrium indexes are also checked to see if they are less than -1.5 or greater than 6.2. If such is the case, the calculations currently being described are done by hand.



Table 5

AN ABSTRACT OF COMPUTER OUTPUT RESULTING FROM COMPUTATION AND  
 PARTIAL ANALYSIS OF SPREAD AND DISEQUILIBRIUM INDEX VECTORS  
 FOR 1965 CHICAGO MARCH RYE OVER 1965 CHICAGO MAY RYE<sup>1</sup>

(Section 1) <sup>2</sup>			
(Observation Number)	(Date)	(Disequilibrium Indexes)	(Spread in Cents Per Bushel)
1	(June 15/64)	-.957	-.700 <sup>3</sup>
2	(June 30/64)	-.842	-.100
3	(July 15/64)	-.588	-.300
4	(July 30/64)	-.465	-.400
5	(Aug. 15/64)	-.562	0.000
6	(Aug. 31/64)	-.622	0.200
7	(Sept. 15/64)	-.638	-.300
8	(Sept. 30/64)	-.638	-2.000
9	(Oct. 15/64)	-.656	-2.000
10	(Oct. 31/64)	-.625	-2.200
11	(Nov. 15/64)	-.590	-1.900
12	(Nov. 30/64)	-.628	-2.700
13	(Dec. 15/64)	-.611	-2.200
14	(Dec. 31/64)	-.570	-2.000
15	(Jan. 15/65)	-.481	-1.600
16	(Jan. 31/65)	-.360	-2.000
17	(Feb. 15/65)	-.322	-2.000
18	(Feb. 28/65)	.350	-3.000
19	(Mar. 15/65)	2.408	-1.000

## (Section 2)

BOT AT -.700 SOLD AT -2.50 PROFIT IS \$90.00 ENTRY DI -.957 RANGE -1.000

continued ...



Table 5 (continued)

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(Section 3)

STOP LOSS NEEDED TO PASS OBS. 2 IS .200  
 STOP LOSS NEEDED TO PASS OBS. 3 IS .100  
 STOP LOSS NEEDED TO PASS OBS. 4 IS .100  
 STOP LOSS NEEDED TO PASS OBS. 5 IS .200  
 STOP LOSS NEEDED TO PASS OBS. 6 IS .200  
 STOP LOSS NEEDED TO PASS OBS. 7 IS .100

(Section 4)

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P STOP .20	PROF \$65	SOLD -2.	WEEKLY PROF .01	HELD FOR 14 (WEEKS)
P STOP .30	PROF \$75	SOLD -2.2	WEEKLY PROF .02	HELD FOR 16 (WEEKS)
P STOP .40	PROF \$100	SOLD -2.7	WEEKLY PROF .02	HELD FOR 22 (WEEKS)

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<sup>1</sup> The term abstract is used here because certain sections of the actual computer output were deleted from this table due to space limitations. These deletions include the code for the two contracts under consideration. Instead the actual literal description of these contracts was used.

<sup>2</sup> Words or phrases in brackets above were not in the original output but have been added to clarify interpretation of the table.

<sup>3</sup> Also the computer output for the last section of the table included the entry price for the spread. It, however, was the same for each iteration, i.e., -.70 cents premium on the March future; thus putting it in this table would have involved needless repetition. Also the original output included the observation number where each new profit increment occurred. For instance, in the last section of the table where the P STOP is seen to be .2, the observation number (8) at which the first profit of 20 percent occurred was listed.





as is done above, a convention is adopted wherein the range is expressed as the maximum absolute value of the bounds of the range. The range for the example in Table 5 is -1.0 and is the last figure of Section 2. For a positive range, for instance 6.2 to 6.1, the range was expressed as 6.2

Once the maximum range for a given vector of disequilibrium indexes is determined, the spread occurring on the same date is assumed to be the entry price at which a speculator using this form of analysis enters the market. Using the previous illustration, the speculator sells March rye and buys May rye when observation 1 occurs and May rye is .7 cents per bushel higher in price than that of March.<sup>1</sup> The next step is to determine when the speculator gets out of the market. The model suggests this time to be when the disequilibrium index becomes equal to zero. In Table 5 (as often is the case) the 17th disequilibrium index is negative, while the 18th is positive. Since indexes calculated are two weeks apart, there is no reason to expect equilibrium to occur on the particular dates for which indexes were found. In the illustration the index indicates equilibrium sometime during the two-week interval between observation 17 and 18. An arbitrary rule is used to determine the exit price the speculator receives. The exit price is taken to be the mean of those two spread observations that occurred with the

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<sup>1</sup> All spreads are expressed in terms of the amount by which the price of the nearby contract exceeds the distant contract. In the illustration the May future is .7 cents per bushel higher in price than is the March future. Thus since all spreads are expressed in terms of premiums of the nearby contract, the spread is given as -.7 cents.



last negative disequilibrium index and the first positive one.<sup>1</sup> In the illustration the exit price is taken to be the average of spread observations 17 and 18 which is -2.5. Application of this procedure to the data in Table 5 gives the following: The entry price for this spread is -.70 and the exit price is -2.5, the entry disequilibrium index is -.957, and the entry range is -1.0. These results are found in Section 2 of Table 5.

The information determined above permits calculation of total profits. Since a contract of rye consists of 5,000 bushels, a change in price of one cent per bushel results in a profit or loss of \$50 per contract. The price change experienced in the spread given in Table 5 is  $-2.5 - (-.7) = 1.8$  cents.<sup>2</sup> Multiplying 1.8 by \$50 gives the total profit for the spread under discussion, which is \$90 as shown in Section 2 of Table 5.

The third stage of the pre-analysis is designed to estimate excess margin requirements involved in practical use of the model. Table 5 is again used for illustrative purposes. Each spread observation between the entry price and the exit price is tested to see what percentage loss (if any) is involved at that observation. Each individual observation is checked in increments of 10 percent. In Section 3 of Table 5, for example, the line which says "STOP LOSS NEEDED TO PASS OBS. 2 IS .200" indicates that between 10 and 20 percent excess margin

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<sup>1</sup> In cases in which the entry index is positive the exit price is taken to be the mean between spread observations occurring with the last positive index and the last negative index.

<sup>2</sup> Actually,  $-2.5 - (-.7) = -1.8$ ; however, since the entry disequilibrium index in this case was negative, the speculator would sell the March rye short and buy the May rye. Since the price of March rye fell relative to May rye, a positive profit of 1.8 cents occurred.



is required. The exact method used involves "asking" the computer whether the price spread at a given observation represents a loss of greater than 10 percent. If so, the observation is checked to see if a loss of greater than 20 percent is represented and so on until the extent of the loss at each observation is determined. In the illustration the loss at observation 2 is greater than 10 percent but less than 20 percent. In this case the computer is instructed to print the information given in Section 3. The steps described are done for each spread observation prior to the point at which the disequilibrium index becomes equal to zero.

Section 4 of Table 5 illustrates the results from the fourth and final stage of the pre-analysis. The procedure used here is similar to that used in checking for stop losses except that profits were examined rather than losses. It covers the same observations as were considered in testing for excess margin requirements. The first line shows that a total profit of \$65 (between 20 and 30 percent) is made after the contract is held 14 weeks. Dividing the percentage profit that occurs by the number of weeks this contract is held gives the profit per week accruing from this spread. Table 5, for example, shows that after 14 weeks the average profit per week over that length of time is 1 percent per week. A final step in the pre-analysis is carried out. Pertinent data for each of the 60 spreads analyzed is written on a separate computer disk file for further analysis. For each spread, such as the one considered in Table 5, the following data are filed so that they can be summarized: the total profit, the maximum weekly



profits, the maximum stop loss encountered, and the time span involved in the spreads.<sup>1</sup>

Discussion of the data transformation and pre-analysis has been completed. These preliminary stages permit further analysis within the context of the model so that the objectives of the study may be met.

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<sup>1</sup> A separate section of computer core storage was set up to receive the maximum weekly profit and maximum stop loss which occurred for each spread tested. Thus in Section 3 of Table 5 the maximum stop loss needed was .200 or 20 percent; for Section 4 the maximum weekly profit encountered was .02 to 2 percent per week. The time span was considered to be the arithmetical difference between the two delivery months involved in the spread. Thus in the case of Table 5 where March (the third month) and May (the fifth month) were involved, the time span was  $5 - 3 = 2$ . Time spans were considered because the expectation was that the amount of substitution occurring between two futures months might be related to the temporal proximity of these two months. Thus the amount of substitution between the March and May futures might be greater than the amount of substitution between the March and September futures. If such is the case and the model being tested is valid, the model's reliability would be expected to vary directly with the proximity of the months being spread.





## CHAPTER VI

### THE ANALYSIS AND RESULTS

#### Interval Estimates

Central to the analysis is the use of profit, maximum weekly profit, and excess margin data generated from raw data and stored on a disc file. A distinction is made between profit and maximum weekly profit. The profit for a given spread is the profit that accrues between the time of entry and the time the disequilibrium index becomes equal to zero.<sup>1</sup> Maximum weekly profit, on the other hand, is the maximum profit occurring at any time between entry into the market and the time the disequilibrium index passes through zero (expressed on a weekly basis).<sup>2</sup>

Two basic operations are performed on the summary data filed when the data transformation and pre-analysis were done. First the total profits, maximum weekly profits, and maximum excess margins (expressed in Table 5 as the stop loss needed to pass a given observation) for the 11 years of 60 spreads are grouped according to commodity, disequilibrium index ranges, and time spans. Second, calculations were made to determine the following: total profits, average maximum weekly profits, and the standard error of the average maximum weekly profits for each group. Also average excess margin requirements and the standard error of the mean for each group were calculated. The number of observations

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<sup>1</sup> The figure \$90 found in Section 2 of Table 5 provides an example of the profit for a certain spread.

<sup>2</sup> Reference to Section 4 of Table 5 will show that the maximum weekly profit for the spread considered is .02 or 2 percent per week.



occurring in each group and the number of spreads showing profits (as opposed to weekly profits) were counted as well. Profits on spreads were expected to change with a corresponding change in the absolute value of the disequilibrium index. This type of behavior was not evident, and for that reason total profit figures are excluded. One conclusion that might be drawn from this point is that equality of the disequilibrium index with zero is not a reliable exit criterion. Furthermore, the temporal proximity of the two futures months being spread was expected to influence the accuracy with which the disequilibrium index enables the analyst to predict directional movements in spreads. Such was not found to be the case, and the grouping of the summary data by time spans was also excluded from the presentation. One implication of this finding is that the participants in the market appear just as likely to make substitutions between deliveries that are close together as between those that are far apart.

The remaining analysis deals with excess margin and maximum weekly profit data grouped by disequilibrium index ranges and commodities. Disequilibrium index ranges, average maximum weekly profits, maximum excess margins and the standard errors for each group are given in Tables 6 to 17. Interval estimates are carried out for each average and are presented in Tables 6 to 17.

To illustrate the meaning and implications of interval estimates, the following illustration is given. Pertinent definitions are given below:

$P \equiv$  maximum weekly profits.

$P_s \equiv$  sample observations of maximum weekly profits.



Table 6

AVERAGE MAXIMUM WEEKLY PROFIT SUMMARY DATA FOR WHEAT GROUPED  
ACCORDING TO DISEQUILIBRIUM INDEX RANGES

DI Ranges <sup>1</sup>	Number of Observations (n)	$t_{\alpha/2}$ (n-1 degrees of freedom) <sup>2</sup>	Average Maximum Weekly Profits <sup>3</sup>	Estimated Population Standard Deviation of Maximum Weekly Profits	Average Maximum Weekly Profit Interval Estimates	
					Lower	Upper
-1.3	3	4.303	0.10	0.02	0.050	0.150
-1.2	18	2.101	0.11	0.11	0.056	0.164
-1.1	26	2.060	0.08	0.10	0.040	0.120
-1.0	18	2.110	0.04	0.07	0.005	0.075
-0.9	17	2.120	0.03	0.05	0.004	0.056
-0.8	13	2.160	0.01	0.05	-0.020	0.040
-0.7	5	2.776	-0.01	0.04	-0.060	0.040
-0.6	3	3.182	-0.02	0.04	-0.093	0.053
-0.5	2	12.706	0.00	0.07	-0.629	0.629

<sup>1</sup> Disequilibrium Index is expressed as DI. The figures given denote lower bounds for ranges. Upper bounds are lower bounds plus 0.1. See also Tables 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 17.

<sup>2</sup> All  $t_{\alpha/2}$  values are taken at the confidence coefficient,  $1 - \alpha = .95$ . See also Tables 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 17.

<sup>3</sup> All weekly profits, standard deviations, and excess margin figures are expressed as percent x 0.01. See also Tables 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 17.



Table 7

AVERAGE MAXIMUM EXCESS MARGIN REQUIREMENT SUMMARY DATA FOR  
WHEAT GROUPED ACCORDING TO DISEQUILIBRIUM INDEX RANGES

DI Ranges	Number of Observations (n)	$t_{\alpha/2}$ (n-1 degrees of freedom)	Average Maximum Excess of Margin Required	Estimated Population Standard Deviation of Maximum Excess Margin Required	Average Maximum Excess Margin Requirement Interval Estimates	
					Lower <sup>1</sup>	Upper
-1.3	3	4.303	0.50	0.61	0.000	2.015
-1.2	18	2.101	0.67	0.73	0.308	1.032
-1.1	26	2.060	0.76	1.02	0.348	1.172
-1.0	18	2.110	0.31	0.69	0.000	0.653
-0.9	17	2.120	0.06	0.06	0.029	0.091
-0.8	13	2.160	0.16	0.19	0.046	0.274
-0.7	5	2.776	0.08	0.08	0.000	0.179
-0.6	3	3.182	0.03	0.06	0.000	0.140
-0.5	2	12.706	0.05	0.07	0.000	0.679

<sup>1</sup> In some cases lower estimates were negative; however, negative excess margins are a logical impossibility and therefore are expressed as zero. See also Tables 9, 11, 13, 15, and 17.





Table 8  
AVERAGE MAXIMUM WEEKLY PROFIT SUMMARY DATA FOR CORN GROUPED  
ACCORDING TO DISEQUILIBRIUM INDEX RANGES

DI Ranges	Number of Observations (n)	$t_{\alpha/2}$ (n-1 degrees of freedom)	Average Maximum Weekly Profits	Estimated Population Standard Deviation of Maximum Weekly Profits	Average Maximum Weekly Profit Interval Estimates	
					Lower	Upper
-1.2	6	2.571	0.22	0.16	0.052	0.388
-1.1	34	2.042	0.10	0.13	0.054	0.146
-1.0	38	2.042	0.05	0.08	0.023	0.077
-0.9	11	2.228	0.09	0.07	0.043	0.137
-0.8	9	2.306	0.05	0.08	-0.011	0.111
-0.7	5	2.776	-0.01	0.07	-0.097	0.077



Table 9  
AVERAGE MAXIMUM EXCESS MARGIN REQUIREMENT SUMMARY DATA FOR  
CORN GROUPED ACCORDING TO DISEQUILIBRIUM INDEX RANGES

DI Ranges	Number of Observations (n)	$t_{\alpha/2}$ (n-1 degrees of freedom)	Average Maximum Excess of Margin Required	Estimated Population Standard Deviation of Maximum Excess Margin Required	Average Maximum Excess Margin Requirement Interval Estimates	
					Lower	Upper
-1.2	6	2.571	0.26	0.52	0.000	0.806
-1.1	34	2.042	0.40	0.55	0.207	0.593
-1.0	38	2.042	0.37	0.60	0.171	0.569
-0.9	11	2.228	0.16	0.26	0.000	0.335
-0.8	9	2.306	0.31	0.54	0.000	0.625
-0.7	5	2.776	0.32	0.55	0.000	1.003



Table 10  
 AVERAGE MAXIMUM WEEKLY PROFIT SUMMARY DATA FOR RYE GROUPED  
 ACCORDING TO DISEQUILIBRIUM INDEX RANGES

DI Ranges	Number of Observations (n)	$t_{\alpha/2}$ (n-1 degrees of freedom)	Average Maximum Weekly Profits	Estimated Population Standard Deviation of Maximum Weekly Profits	Average Maximum Weekly Profit Interval Estimates	
					Lower	Upper
-1.3	2	12.706	0.14	0.01	0.050	0.230
-1.2	11	2.228	0.17	0.23	0.015	0.325
-1.1	53	2.021	0.15	0.40	0.039	0.261
-1.0	24	2.064	0.05	0.07	0.021	0.079
-0.9	6	2.571	0.01	0.03	-0.021	0.041
-0.8	4	3.182	0.02	0.04	-0.044	0.084
-0.7	2	12.706	0.08	0.18	-1.537	1.697
-0.4	2	12.706	-0.10	0.07	-0.729	0.529



Table 11  
AVERAGE MAXIMUM EXCESS MARGIN REQUIREMENT SUMMARY DATA FOR  
RYE GROUPED ACCORDING TO DISEQUILIBRIUM INDEX RANGES

DI Ranges	Number of Observations (n)	$t_{\alpha/2}$ (n-1 degrees of freedom)	Average Maximum Excess of Margin Required	Estimated Population Standard Deviation of Maximum Excess Margin Required	Average Maximum Excess Margin Requirement Interval Estimates	
					Lower	Upper
-1.3	2	12.706	0.00	0.00	0.000	0.000
-1.2	11	2.228	0.77	1.18	0.000	1.563
-1.1	53	2.021	0.28	0.59	0.116	0.444
-1.0	24	2.064	0.24	0.45	0.050	0.430
-0.9	6	2.571	0.37	0.57	0.000	0.968
-0.8	4	3.182	0.40	0.57	0.000	1.307
-0.7	2	12.706	0.05	0.07	0.000	0.679
-0.4	2	12.706	0.15	0.21	0.000	2.037





Table 12

AVERAGE MAXIMUM WEEKLY PROFIT SUMMARY DATA FOR SOYBEANS GROUPED  
ACCORDING TO DISEQUILIBRIUM INDEX RANGES

DI Ranges	Number of Observations (n)	$t_{\alpha/2}$ (n-1 degrees of freedom)	Average Maximum Weekly Profits	Estimated Population Standard Deviation of Maximum Weekly Profits	Average Maximum Weekly Profit Interval Estimates	
					Lower	Upper
-1.1	6	2.571	0.33	0.42	-0.111	0.771
-1.0	35	2.042	0.03	0.04	0.016	0.044
-0.9	22	2.080	0.02	0.03	0.007	0.033
-0.8	23	2.074	0.07	0.11	0.022	0.118
-0.7	8	2.365	-0.04	0.48	-0.441	0.361
-0.6	2	12.706	0.00	0.02	-0.180	0.180
-0.5	2	12.706	-0.09	0.12	-1.168	0.988



Table 13  
AVERAGE MAXIMUM EXCESS MARGIN REQUIREMENT SUMMARY DATA FOR SOYBEANS  
GROUPED ACCORDING TO DISEQUILIBRIUM INDEX RANGES

DI Ranges	Number of Observations (n)	$t_{\alpha/2}$ (n-1 degrees of freedom)	Average Maximum Excess of Margin Required	Estimated Population Standard Deviation of Maximum Excess Margin Required	Average Maximum Excess Margin Requirement Interval Estimates	
					Lower	Upper
-1.1	6	2.571	0.57	0.80	0.000	1.410
-1.0	35	2.042	0.37	0.76	0.108	0.632
-0.9	22	2.080	0.24	0.41	0.058	0.422
-0.8	23	2.074	0.37	0.86	0.000	0.742
-0.7	8	2.365	0.49	0.74	0.000	1.109
-0.6	2	12.706	0.20	0.14	0.000	1.458
-0.5	2	12.706	0.50	0.42	0.000	4.273



Table 14  
AVERAGE MAXIMUM WEEKLY PROFIT SUMMARY DATA FOR SOYBEAN OIL  
GROUPED ACCORDING TO DISEQUILIBRIUM INDEX RANGES

DI Ranges	Number of Observations (n)	$t_{\alpha/2}$ (n-1 degrees of freedom)	Average Maximum Weekly Profits	Estimated Population Standard Deviation of Maximum Weekly Profits	Average Maximum Weekly Profit Interval Estimates	
					Lower	Upper
-1.1	33	2.042	0.08	0.11	0.041	0.119
-1.0	28	2.052	0.06	0.03	0.029	0.091
-0.9	16	2.131	0.08	0.16	-0.005	0.165
-0.8	7	2.447	0.03	0.05	-0.016	0.076
-0.7	8	2.365	0.00	0.04	-0.033	0.033
-0.6	2	12.706	-0.01	0.05	-0.459	0.439
-0.4	2	12.706	-0.10	0.21	-1.987	1.787



Table 15  
AVERAGE MAXIMUM EXCESS MARGIN REQUIREMENT SUMMARY DATA FOR  
SOYBEAN OIL GROUPED ACCORDING TO DISEQUILIBRIUM INDEX RANGES

DI Ranges	Number of Observations (n)	$t_{\alpha/2}$ (n-1 degrees of freedom)	Average Maximum Excess of Margin Required	Estimated Population Standard Deviation of Maximum Excess Margin Required	Average Maximum Excess Margin Requirement Interval Estimates	
					Lower	Upper
-1.1	33	2.042	0.64	1.06	0.263	1.017
-1.0	28	2.052	0.33	0.72	0.051	0.609
-0.9	16	2.131	0.51	0.80	0.084	0.936
-0.8	7	2.447	0.84	1.49	0.000	2.218
-0.7	8	2.365	0.28	0.46	0.000	0.665
-0.6	2	12.706	0.15	0.21	0.000	2.037
-0.4	2	12.706	0.25	0.35	0.000	3.395





Table 16

AVERAGE MAXIMUM WEEKLY PROFIT SUMMARY DATA FOR SOYBEAN MEAL  
GROUPED ACCORDING TO DISEQUILIBRIUM INDEX RANGES

DI Ranges	Number of Observations (n)	$t_{\alpha/2}$ (n-1 degrees of freedom)	Average Maximum Weekly Profits	Estimated Population Standard Deviation of Maximum Weekly Profits	Average Maximum Weekly Profit Interval Estimates	
					Lower	Upper
-1.2	2	12.706	0.31	0.20	-1.487	2.107
-1.1	17	2.120	0.23	0.21	0.122	0.338
-1.0	44	2.021	0.05	0.11	0.016	0.084
-0.9	20	2.093	0.05	0.08	0.013	0.087
-0.8	11	2.228	0.18	0.56	-0.196	0.556
-0.7	2	12.706	0.03	0.02	-0.150	0.210
-0.6	2	12.706	0.03	0.00	0.030	0.030
-0.5	2	12.706	0.05	0.14	-1.208	1.308
-0.4	2	12.706	0.00	0.35	-3.145	3.145
1.8*	2	12.706	0.06	0.07	-0.569	0.689

\* This disequilibrium index range is positive. However, it is treated as negative in the regressions presented in Appendix B, Tables 21 and 22, to obviate specification of a parabolic functional form.



Table 17  
AVERAGE MAXIMUM EXCESS MARGIN REQUIREMENT SUMMARY DATA FOR SOYBEAN  
MEAL GROUPED ACCORDING TO DISEQUILIBRIUM INDEX RANGES

DI Ranges	Number of Observations (n)	$t_{\alpha/2}$ (n-1 degrees of freedom)	Average Maximum Excess of Margin Required	Estimated Population Standard Deviation of Maximum Excess Margin Required	Average Maximum Excess Margin Requirement Interval Estimates	
					Lower	Upper
-1.2	2	12.706	0.40	0.57	0.000	5.521
-1.1	17	2.120	0.54	1.31	0.000	1.214
-1.0	44	2.021	0.62	0.92	0.340	0.900
-0.9	20	2.093	0.95	1.17	0.402	1.498
-0.8	11	2.228	0.61	1.20	0.000	1.416
-0.7	2	12.706	0.05	0.07	0.000	0.679
-0.6	2	12.706	0.25	0.35	0.000	3.395
-0.5	2	12.706	0.05	0.07	0.000	0.679
-0.4	2	12.706	0.00	2.83	0.000	25.426
1.8*	2	12.706	0.33	0.47	0.000	4.553

\* See Table 16.



$\bar{P} \equiv$  true population mean of maximum weekly profits.

$\bar{P}_s \equiv$  estimated population mean of maximum weekly profits.

$\sigma_P^2 \equiv$  true population variance of maximum weekly profits.

$\sigma_{P_s}^2 \equiv$  estimated variance of maximum weekly profits.

$S_{P_s}^2 \equiv$  sample variance of maximum weekly profits.

The following assumptions are made:

1.  $P_s$  is a random sample of size  $n$  from the population of all spreads considered.
2. Sample means are assumed to be distributed independent, normal with mean  $\bar{P}$  and variance  $\frac{1}{n} \cdot \sigma_P^2 = \sigma_{\bar{P}}^2$ .

For such cases the test statistic  $Z$  is standard and normal where,

$$Z = \frac{\bar{P}_s - \bar{P}}{\sqrt{\sigma_{\bar{P}}^2}}.$$

Further,  $E(\bar{P}_s) = \bar{P}$ , i.e.,  $\bar{P}_s$  is an unbiased estimate of  $\bar{P}$  and  $E(\sigma_{P_s}^2) = \sigma_P^2$ ,

in other words,  $\sigma_{P_s}^2$  is an unbiased estimate of  $\sigma_P^2$  or  $\sigma_{\bar{P}_s}^2$  is an unbiased

estimate of  $\sigma_{\bar{P}}^2$ . Therefore,  $Z = \frac{\bar{P}_s - \bar{P}}{\sqrt{\sigma_{\bar{P}}^2}}$ .

For small sample properties  $t$  is used in place of  $Z$  and

$\sigma_{P_s}^2 = \frac{1}{n-1} S_{P_s}^2$  and  $t$  is defined as

$$t = \frac{\bar{P}_s - \bar{P}}{\sqrt{\sigma_{P_s}^2/n}}.$$



Using  $t$  interval, estimates are given by

$$\Pr[-t_{\alpha/2} \leq \frac{\bar{P}_s - \bar{P}}{\sqrt{\sigma_{P_s}^2/n}} \leq t_{\alpha/2}] = 1 - \alpha$$

which reduces to

$$\Pr[\bar{P}_s - t_{\alpha/2} (\sqrt{\sigma_{P_s}^2/n}) \leq \bar{P} \leq \bar{P}_s + t_{\alpha/2} (\sqrt{\sigma_{P_s}^2/n})] = 1 - \alpha$$

where  $\alpha$  is a confidence level.

The following example of the calculation of interval estimates is from Table 6. The first disequilibrium index is -1.3, and the average maximum weekly profit ( $\bar{P}$ ) for that disequilibrium index group is 0.10, and the standard error of  $\bar{P}$  is 0.02. The number of observations ( $n$ ) is 3, and the resulting number of degrees of freedom ( $n-1$ ) is 2. The value of  $t_{0.025}$  for  $n-1 = 2$  is 4.303.<sup>1</sup> Substitution into the equation above gives

$$\Pr[0.10 - 4.303 (0.02/3) \leq \bar{P} \leq 0.10 + 4.303 (0.02/3)] = .95$$

or  $\Pr[0.0505 \leq \bar{P} \leq 0.1495] = .95$ , which means that if all assumptions hold there is a 95 percent probability that  $\bar{P}$  lies between 0.0505 and 0.1495. Interval estimates made in the manner just described are given in summary Tables 6 to 17 for average maximum weekly profits and average maximum margin requirements.<sup>2</sup>

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<sup>1</sup> Alexander M. Mood, Introduction to the Theory of Statistics (New York: McGraw-Hill Book Company, Inc., 1950), p. 425.

<sup>2</sup> For a discussion of the theory relevant to the computation of interval estimates see Samuel B. Richmond, Statistical Analysis (New York: The Ronald Press Company, 1964), p. 180.





## Regression Analysis

To formalize relationships in the summary data for each commodity between the absolute value of the disequilibrium index ranges and the average maximum weekly profits, least-square estimation procedure is carried out. Both linear and curvilinear functional forms are used.<sup>1</sup> The standard linear regression form is as follows:

$$\hat{Y} = \hat{\beta}_0 + \hat{\beta}_1 X$$

where  $\hat{Y}$  represents the estimated average maximum weekly profit,  $\hat{\beta}_0$  is the Y intercept,  $\hat{\beta}_1$  is the slope coefficient and X is the disequilibrium index range. The curvilinear form used is as follows:

$$\hat{Y} = \hat{\beta}_0 X^{\hat{\beta}_1}.$$

Least squares estimation of parameters necessitated logarithmic transformations on the data. The logarithmic form of the curvilinear model is as follows:

$$\log \hat{Y} = \log \hat{\beta}_0 + \hat{\beta}_1 \log X.$$

A large proportion of the observations of the variables (Tables 6 to 17) are negative, and the logarithms of negative numbers are imaginary.

Consequently, data conversion was necessary to render all observations positive but to leave unaltered variations in the data for the variables X and Y. In essence this conversion is done by shifting the coordinates of the two variables such that they fall solely within the positive quadrants, that is, by adding a scaler (constant) to both variables. The regression coefficients are then estimated, and the scaler removed by subtraction. Examination of summary data tables reveals no observations less than -2.0. The data conversion is accomplished by adding

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<sup>1</sup> Data plots suggested that curvilinear forms may be superior in certain cases. Parameters of both forms were estimated in all cases for purposes of comparison.



2.0 to all observations for X and Y. For estimation the logarithmic function is as follows:

$$\log (\hat{Y}+2) = \log \hat{\beta}_0 + \hat{\beta}_1 \log (X+2).$$

The antilogarithmic equation in terms of Y is as follows:

$$\hat{Y} = [\hat{\beta}_0(X+2)^{\hat{\beta}_1}] - 2.$$

Values of estimates  $\hat{\beta}_0$  and  $\hat{\beta}_1$  for each set of observations are given in Tables 17 and 18, along with their respective standard errors, t-ratios of the slope coefficient  $\hat{\beta}_1$ , and coefficients of determination.<sup>1</sup> Interval estimates for each slope coefficient are also given in the Table.

Reference to the regression summary (Tables 18 and 19) shows that in the linear case the slope coefficients are significantly different from zero at the .95 level for all commodities except soybean meal. Also with the exception of soybean meal the disequilibrium index ranges explain at least 71.7 percent of the variance in average maximum weekly profits and at most 90.3 percent. With the curvilinear functional specification all slope coefficients are significant at the .95 percent level with the exception of soybean meal. Variation in the disequilibrium index ranges explained between 66.0 and 91.2 percent of the variation in the average maximum weekly profits. The implication of these findings appears to be that the speculator using the strategy developed herein can predict average profits which may be accrued from a given commodity spread by using disequilibrium indexes.

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<sup>1</sup> The standard errors, coefficients of determination and t-ratios for the curvilinear forms are given for the transformed forms.



Table 18  
 SUMMARY REGRESSION RESULTS FOR ALL COMMODITIES,  
 LINEAR FORM  $\hat{Y} = \beta_0 + \beta_1 X$ \*

Commodity	$\beta_0$	$\beta_1$	Standard Error of $\beta_1$	t-ratio	Number of Observations (N)	t statistic at .95 confidence level (n-1) degrees of freedom	Coefficient of Determination ( $R^2$ )	Interval Estimates For $\beta_1$ at .95 Confidence Level	
								Lower	Upper
Wheat	-0.1122	-0.1666	0.0230	-7.473	9	1.860	0.889	-0.2196	-0.1136
Corn	-0.2587	-0.3600	0.1018	-3.5	6	2.015	0.758	-0.3903	-0.3297
Rye	-0.1870	-0.2697	0.0556	-4.847	8	1.895	0.797	-0.4012	-0.1382
Soybeans	-0.3486	-0.4929	0.1735	-2.840	7	1.943	0.617	-0.9175	-0.0683
Soybean Oil	-0.1784	-0.2525	0.0370	-6.827	7	1.943	0.903	-0.343	-0.162
Soybean Meal	-0.0120	-0.0967	0.0828	-1.167	10	1.833	0.146	-0.284	0.0906

\* For graphic representations of regressions given in this table, refer to Appendix C, Figures 1 to 6.



Table 19

SUMMARY REGRESSION RESULTS FOR ALL COMMODITIES<sup>1</sup>

$$\text{CURVILINEAR FORM } \hat{Y} = (\beta_0 (X+2)^{\beta_1}) - 2 *$$

Commodity	$\beta_0$	$\beta_1$	Standard Error of $\beta_1$	$\beta_1$ t-ratio	Number of Observations (N)	Degrees of Freedom (n-1)	Coefficient of Determination ( $R^2$ )	Interval Estimates for $\beta_1$ at .95 Confidence Level	
								Lower	Upper
Wheat	2.0491	-0.0872	0.0124	-8.521	9	1.860	0.912	-0.1158	-0.0586
Corn	2.0953	-0.1796	0.0465	-3.865	6	2.015	0.7888	-0.2992	-0.06
Rye	2.0217	-0.1409	0.0315	-4.466	8	1.895	0.7688	-0.2154	-0.0664
Soybeans	2.1428	-0.2837	0.0893	-3.176	7	1.943	0.669	-0.5022	-0.0652
Soybean Oil	2.0733	-0.1493	0.0280	-5.327	7	1.943	0.850	-0.2178	-0.0808
Soybean Meal	2.0962	-0.0139	0.0279	-5.005	10	1.833	0.0303	-0.077	0.0492

<sup>1</sup> Since these results arose from treatment of the data as linear in logged form, the standard errors, t-ratios, and the coefficients of determination are only applicable to data in the logarithmic form.

\* For graphic representations of regression given in this Table, refer to Appendix C, Figures 1 to 6.





## CHAPTER VII

### SUMMARY, CONCLUSIONS, AND SUGGESTIONS FOR FURTHER RESEARCH

#### Summary

The futures markets are old institutions that have survived onslaughts by a multitude of critics, possibly because they fill an economic need in the marketing of products whose prices are subject to large fluctuations. The usefulness of these markets relies to a large extent on the accuracy with which market participants discount the information available to them. Thus any means of improving discounting will improve the functioning of the futures market.

The major objective of this thesis is to develop a strategy to predict qualitative movements in commodity futures prices. This strategy is based on an attempt to treat volume and open interest data in the futures market in a manner similar to the use of quantities traded in economic theory.

The first step in meeting this objective is construction of a theoretical framework based on the indifference relation prevalent in economic theory. This framework is redefined in terms of the commodity futures market with the principal suggestion being made that volume and open interest may be treated as analogs of quantities traded in a theoretical model. Modification of collected volume, open interest, and price data is done to make testing of the empirical model possible. This step involved using the data to generate disequilibrium indexes for the commodity spreads presented in Appendix B. Finally, quantitative analysis is conducted to determine the validity of the empirical



model. This stage involves data grouping, regression analysis, interval estimates, and certain tests of the hypothesis. The analytical results are related to the objective of the investigation through the conclusions discussed below.

### Conclusions

The analytical results indicate a high statistically significant positive relationship between the absolute value of the disequilibrium index and the size of the average maximum weekly profits for five of the six commodities tested. For these five commodities the speculator, by using the strategy developed here, can predict the direction that a given spread will move over time and make estimates of the maximum weekly profits to be expected.<sup>1</sup>

Although average maximum weekly profits of soybean meal (the sixth commodity) are all positive, estimated variances are sufficiently large to preclude a conclusion similar to that drawn for the other five commodities. However, the results for wheat, corn, rye, soybeans, and soybean oil indicate for those commodities that the initial objective of developing a useful speculative strategy has been reached. One implication arising out of this conclusion is that the market appears to make discounting errors. If use of the disequilibrium index enables the analyst to predict profits accruing from spreads, then the previous conclusion must be reached.

One point of interest is that the upper and lower interval estimates of the average maximum weekly profits (and these averages) tend to decrease as the disequilibrium index ranges decline in absolute

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<sup>1</sup> Soybean meal is excepted.



value (see Tables 6 to 17). Since each interval estimate is a probability estimate that a given maximum weekly profit will fall within a certain range, the implication is that the possibility of making a profit on a given spread declines with the absolute value of the disequilibrium index.

Another interesting point arises out of examination of the summary tables for the different commodities. Almost all of the disequilibrium index ranges are negative. This observation is not entirely consistent with the original hypothesis set forth. A positive disequilibrium index was expected to be associated with a consequent increase in the premium that the nearby month exhibits over the distant month. The opposite type of price behavior should be associated with a negative disequilibrium index. Examination of the summary tables indicates, rather, that a large negative disequilibrium index is associated with a forthcoming decrease in the price of the nearby month relative to the distant month. On the other hand, smaller negative values appear to be associated with increases in the nearby month's premium. Apparently, small negative disequilibrium index values are analogous to positive disequilibrium index values. If so, another implication arises. Some small negative index size (such as  $-.7$  or  $-.8$  in the case of wheat) is actually the size of disequilibrium index associated with market equilibrium, rather than zero as was originally expected.

A possible reason for this type of behavior is as follows. The sum of volume and open interest for respective futures months is used to approximate  $Q_2$  and  $Q_1$ . Examination of a data series for almost



any futures months will show that the open interest and volume tend to first increase, peak, and then decline over the contract life. There is no assurance, however, that the volume and open interest for the two futures will increase at the same rate. The fact that the nearby volume and open interest tend to exceed the distant volume and open interest in the early stages of their respective contract lives means that approximation of the ratio  $Q_2/Q_1$  will tend to be negative. For example, suppose that the nearby month, say March 1969, wheat begins to trade on April 1, 1968. Further suppose that the May 1969 wheat contract begins to trade on June 1, 1968. The assumption is also made that on the first day each contract trades the sum of volume and open interest for each contract is 10 and the sum of volume and open interest for each contract increases at a constant rate from that time on. On the first day that prices of March and May wheat futures can be compared (June 1, 1968), the sum of volume and open interest for the May future will be 10, while the sum of volume and open interest for the March future (which has been trading two months longer than the May) will be greater, say 100. Thus the estimate of  $Q_2$  in this case will be 10, while the estimate of  $Q_1$  will be 100. Taking the ratio,  $Q_2/Q_1$ , will give  $10/100 = 0.1$ . Assuming that the price ratio  $P_1/P_2$  equals 1, the disequilibrium index will equal  $-0.9$ , even though the relative level of activity in each contract has been the same. Thus estimates of market disequilibrium are biased downward. Adjustment for this bias might have been accomplished by lagging volume and open interest data. The lag time would be such that data for the two futures would be compared the same number of trading days after the beginning of trading





for the respective contracts. Another tack, given the results of the analysis done here, might be to use a disequilibrium index of  $-0.7$  or  $-0.8$  as the exit criterion rather than zero as was the case. Had this criterion been used, the possibility exists that the total profit figures (which were excluded from the analysis) might have shown a closer relationship with the disequilibrium index ranges. As a final point concerning excess margin averages and interval estimates of those averages, no discernable tendencies were evident.

As a recapitulation the steps made by a speculator using this strategy will be retraced. Perhaps examination of volume and open interest data for wheat on a given day indicates that March and May wheat are not in equilibrium with one another. By summing volume and open interest for each of the two months to get  $Q_2$  and  $Q_1$ , applying the appropriate weights, and taking the price ratio,  $P_1/P_2$ , he finds that the disequilibrium index is  $-1.3$ . By referring to Table 6, he sees that the expected maximum weekly profit with a disequilibrium index of this size is between 5 and 15 percent. Therefore he sells a given number of contracts of March wheat and buys an equal number of May wheat contracts. Given the findings herein, he has two criteria upon which to base his decision to unwind his spread. He may either get out when the disequilibrium index reaches about  $-0.7$  or when he has obtained a profit of between 5 and 15 percent per week. Given the research done thus far, the relative merits of these two criteria cannot be fully assessed. The author's inclination is to act upon whichever of the two occurrences comes first. One further point should be stressed. Even though a speculator may know with certainty



that a given spread will move in a certain direction over time, it may still go against him in the short run, often with disastrous results. Therefore, timing of trades is still of great importance.

This discussion leads to the point that new knowledge generally brings with it new uncertainty. Uncertainty generally can be resolved only with research. Thus the next section of this chapter is devoted to suggestions for further research.

#### Suggestions for Further Research

Two suggestions arise out of the previous discussion. One is that the commodity spreads might be retested, lagging the volume and open interest data so that these data for the respective futures contracts would be compared the same length of time into their contract lives. The second suggestion is that the size of the disequilibrium indexes occurring when maximum weekly profits are obtained should be retested in order to estimate the values of disequilibrium indexes which indicate market equilibrium for the various commodities.

Useful results might be obtained by using some daily rather than bi-weekly observations. More precise measurement usually leads to more precise results.

The failure to obtain reasonable results with soybean meal is interesting. One minor source of difficulty in this case could have arisen out of the fact that carrying charges for soybean meal are assumed to be zero. Possibly this commodity exhibits a type of carrying charge in that it can be stored in the form of soybeans. However, research of this nature would be primarily academic, since the



subtraction of carrying charges from the distant prices can make only minor differences in the ratio  $P_1/P_2$ , and thus only minor differences in the disequilibrium index. A more fruitful approach might be based on the fact that soybean meal and soybean oil are joint outputs. A useful model might be developed for the soybean complex by taking this fact into consideration.

Another interesting possibility for this type of analysis might be found in inter-market spreads. An example of this type of spread might be March Kansas City wheat against March Chicago wheat. If Chicago wheat substitutes for Kansas City wheat, there may be an indifference relation between them. Another possibility along this line might concern inter-commodity spreads such as May Chicago corn versus May Chicago oats. These two grains are usually considered competing inputs in livestock production and thus possibly are substituted for one another along an indifference schedule. Also the possibility that an indifference relation exists between commodities trading in two different countries (such as Chicago rye and Winnipeg rye) might be considered.

Beyond strict consideration of futures trading, the type of analysis used here might be applied to cash commodities. For instance, Canadian cattle appear to be a good substitute for American cattle and a similar model might be applied to predict international cattle price relationships.

In general, similar research might be done in commodities and markets other than those covered here. The model developed on the previous pages might apply in many cases where intertemporal and/or interregional allocation takes place.



Finally, the author is a firm believer in the principle that the sooner a model is moved outside the perview of formal analysis and is tested in practice, the better. The efficacy of a military rifle is probably best tested on the battlefields: the same argument applies to economic models.





## BIBLIOGRAPHY

- BAKKEN, Henry H. Futures Trading Seminar. Madison, Wisconsin: Mimar Publisher, Inc., 1966.
- BOARD OF TRADE OF THE CITY OF CHICAGO. Commodity Trading Manual. Wilmette, Illinois: Commodity Press, 1968.
- COMMODITY RESEARCH BUREAU. Commodity Year Book 1969. New York: Commodity Research Bureau, 1968.
- FERGUSON, C. E. Microeconomic Theory. Homewood, Illinois: Richard D. Irwin, Inc., 1966.
- GREY, Roger W. "The Search For A Risk Premium," Journal of Political Economics, LXIX (June 1961), 250-260.
- HOUTHAKKER, Hendrick S. "Systematic and Random Elements in Short Term Price Movements," American Economic Review, LI (May 1961).
- KANSAS CITY GRAIN MARKET REVIEW. Various dates.
- MALINVAUD, E. "Interest Rates in the Allocation of Resources," in The Theory of Interest Rates. Edited by Hahn and Brechling. New York: Macmillan, 1965.
- MOOD, Alexander M. Introduction to the Theory of Statistics. New York: McGraw-Hill Book Company, Inc., 1950.
- RICHMOND, Samuel B. Statistical Analysis. New York: The Ronald Press Company, 1964.
- TELSER, Lester G. "Futures Trading and the Storage of Cotton and Wheat," Journal of Political Economics, LXVI (June 1968).
- UNITED STATES DEPARTMENT OF AGRICULTURE, Commodity Exchange Authority. Commodity Futures Statistics July 1957 - June 1958. Statistical Bulletin No. 239. Washington, D.C.: U.S.D.A., 1958.
- \_\_\_\_\_. Commodity Futures Statistics July 1958 - June 1959. Statistical Bulletin No. 256. Washington, D.C.: U.S.D.A., 1959.
- \_\_\_\_\_. Commodity Futures Statistics July 1959 - June 1960. Statistical Bulletin No. 274. Washington, D.C.: U.S.D.A., 1960.
- \_\_\_\_\_. Commodity Futures Statistics July 1960 - June 1961. Statistical Bulletin No. 302. Washington, D.C.: U.S.D.A. 1961.
- \_\_\_\_\_. Commodity Futures Statistics July 1961 - June 1962. Statistical Bulletin No. 323. Washington, D.C.: U.S.D.A. 1962.



UNITED STATES DEPARTMENT OF AGRICULTURE, Commodity Exchange Authority.  
Commodity Futures Statistics July 1962 - June 1963. Statistical  
 Bulletin No. 338. Washington, D.C.: U.S.D.A., 1963.

\_\_\_\_\_. Commodity Futures Statistics July 1963 - June 1964. Statistical  
 Bulletin No. 352. Washington, D.C.: U.S.D.A., 1964.

\_\_\_\_\_. Commodity Futures Statistics July 1964 - June 1965. Statistical  
 Bulletin No. 365. Washington, D.C.: U.S.D.A., 1965.

\_\_\_\_\_. Commodity Futures Statistics July 1965 - June 1966. Statistical  
 Bulletin No. 382. Washington, D.C.: U.S.D.A., 1966.

\_\_\_\_\_. Commodity Futures Statistics July 1966 - June 1967. Statistical  
 Bulletin No. 414. Washington, D.C.: U.S.D.A., 1967.

\_\_\_\_\_. Commodity Futures Statistics July 1967 - June 1968. Statistical  
 Bulletin No. 432. Washington, D.C.: U.S.D.A., 1968.

WALL STREET JOURNAL. "Futures Prices," various dates.

\_\_\_\_\_. "Volume and Open Interest," various dates.

WORKING, Holbrook. "Hedging Reconsidered," Journal of Farm Economics,  
 XXXV (January 1949).

\_\_\_\_\_. "The Theory of the Price of Storage," American Economic Review,  
 XXIX (December 1959).

\_\_\_\_\_. "New Concepts Concerning Futures Markets and Prices," American  
 Economic Review, LII (May 1962).

\_\_\_\_\_. "The Investigation of Economic Expectation," American Economic  
 Review, XXXIX (May 1949).

\_\_\_\_\_. "The Theory of the Inverse Carrying Charge in the Futures Market,"  
Journal of Farm Economics, XXX (February 1948).



## APPENDICES



## APPENDIX A

### GLOSSARY OF TERMS PECULIAR TO THE FUTURES MARKET

**BAD FILL** - The purchase of a commodity future at a price higher than the buyer was originally willing to pay or the sale of the future at a price lower than the seller was originally willing to accept.

**BASIS** - The difference in price between a given commodity future and the cash price for the same commodity. Basis is usually expressed as a given number of cents above or below the nearest future trading.

**BASIS IN STORE** - This term refers to the pricing of a commodity. A basis in store price is a price which is quoted for a commodity in storage at a certain location.

**CASH (commodity)** - This term refers to physical merchandise, i.e., goods available for delivery immediately or within a designated period following sale.

**CASH (price)** - The price of a cash commodity.

**COMMODITY FUTURES (contract)** - An agreement to buy or sell a certain quantity and quality of a certain commodity at a certain future date for a specified price.

**COMPANY'S TRADER** - One who actually executes transactions in the commodity futures market for a certain company.

**CONTRACT** - See futures contract.

**DAY ORDER** - An order to purchase or sell a commodity futures contract that is to remain in effect only from the time the order is placed until it is filled or the current trading session ends, whichever comes first.

**DAY TRADER** - A commodity futures speculator who characteristically holds a futures contract for less than one day.

**DELIVERY (month)** - The calendar month during which a futures contract matures.

**DISCOUNT (information)** - To discount information is to adjust the price of a commodity in accordance with available supply and/or demand information. adj. discounted, n. discounting.

**FLOOR** - The place in a commodity futures exchange where trading of commodity futures takes place.





FLOOR BROKER - Any person who, in a commodity futures exchange, executes for others any order to purchase or sell a commodity futures contract(s).

FUNDAMENTAL (analysis) - Analysis of supply and demand factors which are expected to cause future price changes in the commodity futures market.

FUTURE - See commodity futures.

LIFTING (hedges) - The act of buying or selling a futures contract which was previously purchased or sold in the act of hedging.

LIMIT ORDER - An order to buy or sell a commodity futures contract only equal to or below a certain price (in the case of purchase) or to sell only equal to or above a certain price (in the case of selling).

LONG - A commodity futures trader is said to be long if he has purchased a futures contract, i.e., if he has made a contract to take delivery of a commodity at some future date.

LONG HEDGE - A futures transaction wherein a given number of futures contracts are purchased as a substitute for a commodity which will be purchased in the future. Hedges are usually used to protect against price changes.

MAINTENANCE MARGIN - The amount of money which a hedger or speculator is required to keep on deposit against his futures contracts. See margin deposit.

MARGIN DEPOSIT - An amount of money deposited by buyers and sellers of futures contracts to insure performance on contract commitments, serves as a performance bond rather than a down payment.

MARKET ORDER - An order to buy or sell a commodity future at the prevailing market price when the order reaches the floor of a commodity futures exchange.

MATURITY DATE - The last date at which transactions in a given commodity future may take place.

ODD LOT - A unit of trading smaller than the usual amount. e.g., in grains an amount less than 5,000 bushels.

OFFSET - The cancellation of a long or short position by an equal and opposite futures transaction.

OFF-SETTING (transaction) - A transaction which causes a trader to offset a previous commitment in the futures market.

OPEN INTEREST - The total number of outstanding contracts at any point in time.



OPEN ORDER - An order to buy or sell futures which remain in force until the order is either filled or cancelled or until the maturity date of the future specified in the order.

ORIGINAL MARGIN - The margin requirement on the first day that a transaction is entered into. The original margin is usually greater than the maintenance margin.

OVERSOLD (market) - A market is said to be oversold if heavy selling has driven the price below equilibrium.

PIT BROKER - See floor trader.

POSITION TRADER - A person who has trading privileges on the floor of a commodity futures exchange and who characteristically holds futures contracts for his own account for extended periods of time.

SPREAD - A spread may be defined as the purchase of one future against the sale of another future of the same commodity or a different commodity in the same or different markets.

SPREADING - The act of trading in spreads.

SHORT - A commodity trader is said to be short if he has sold a futures contract, i.e., he has made a contract to deliver a commodity at a certain time in the future.

TECHNICAL (analysis) - A type of market analysis which relies primarily on the use of charts to gauge market psychology in order to predict futures price changes.

TIRED LONGS - Speculators who have purchased futures contracts at some point in the past and sell these futures when they become tired of waiting for prices to rise.

UNWIND (a spread) - The act of getting out of a commodity spread. The future which was previously bought is sold and the future which was previously sold is purchased.

VOLUME - The total number of transactions taking place in a future or futures in a given length of time, usually one day.



# APPENDIX B

Table 1  
MARCH OVER MAY CHICAGO WHEAT, 1958 - 1968

1958				1959				1960				1961			
Date	DI <sup>a</sup>	Spread		Date	DI	Spread		Date	DI	Spread		Date	DI	Spread	
		¢/bu.				¢/bu.				¢/bu.				¢/bu.	
June 15	-0.753	6.000		June 15	-0.850	3.100		June 15	-0.896	3.100		June 15	-0.722	0.900	
June 30	-0.373	3.900		June 30	-0.738	1.700		June 30	-0.835	2.200		June 30	-0.511	0.800	
July 15	-0.397	5.000		July 15	-0.540	1.800		July 15	-0.700	2.200		July 15	-0.611	0.200	
July 31	-0.350	5.700		July 31	-0.521	1.200		July 31	-0.640	1.700		July 31	-0.583	0.500	
Aug. 15	-0.336	5.300		Aug. 15	-0.481	0.100		Aug. 15	-0.604	1.000		Aug. 15	-0.551	0.000	
Aug. 31	-0.392	3.800		Aug. 31	-0.415	0.100		Aug. 31	-0.529	2.000		Aug. 31	-0.589	0.100	
Sept. 15	-0.415	4.000		Sept. 15	-0.429	0.500		Sept. 15	-0.534	1.500		Sept. 15	-0.552	0.700	
Sept. 30	-0.379	3.600		Sept. 30	-0.265	0.600		Sept. 30	-0.454	1.500		Sept. 30	-0.547	1.700	
Oct. 15	-0.340	5.800		Oct. 15	-0.083	1.000		Oct. 15	-0.503	2.000		Oct. 15	-0.521	1.600	
Oct. 31	-0.371	4.200		Oct. 31	0.021	0.800		Oct. 31	-0.497	3.500		Oct. 31	-0.406	1.500	
Nov. 15	-0.402	3.500		Nov. 15	0.040	2.000		Nov. 15	-0.408	4.000		Nov. 15	-0.389	2.100	
Nov. 30	-0.329	4.500		Nov. 30	0.025	1.800		Nov. 30	-0.483	4.000		Nov. 30	-0.390	3.500	
Dec. 15	-0.240	5.000		Dec. 15	-0.028	3.000		Dec. 15	-0.468	1.800		Dec. 15	-0.242	3.200	
Dec. 31	-0.153	8.000		Dec. 31	0.096	4.800		Dec. 31	-0.416	2.500		Dec. 31	-0.127	3.800	
Jan. 15	-0.139	6.000		Jan. 15	0.115	3.700		Jan. 15	-0.272	0.700		Jan. 15	0.204	1.500	
Jan. 31	0.336	4.000		Jan. 31	0.299	-2.400		Jan. 31	-0.233	0.100		Jan. 31	0.507	1.000	
Feb. 15	0.858	3.700		Feb. 15	0.484	2.000		Feb. 15	0.148	-1.800		Feb. 15	1.296	0.000	
Feb. 28	1.933	2.800		Feb. 28	1.151	-1.500		Feb. 28	1.377	-2.400		Feb. 28	2.405	-1.500	
Mar. 15	6.771	3.500		Mar. 15	3.819	4.000		Mar. 15	13.821	-1.200		Mar. 15	4.924	0.500	

1962				1963				1964				1965			
Date	DI	Spread		Date	DI	Spread		Date	DI	Spread		Date	DI	Spread	
		¢/bu.				¢/bu.				¢/bu.				¢/bu.	
June 15	-0.731	-1.700		June 15	-0.621	4.500		June 15	-0.827	6.000		June 15	-0.547	-0.600	
June 30	-0.555	-0.800		June 30	-0.705	3.200		June 30	-0.581	5.500		June 30	-0.533	-0.500	
July 15	-0.570	-2.000		July 15	-0.623	1.700		July 15	-0.550	4.700		July 15	-0.458	-0.800	
July 31	-0.530	-1.100		July 31	-0.488	2.000		July 31	-0.579	6.400		July 31	-0.441	-1.000	
Aug. 15	-0.354	-1.800		Aug. 15	-0.446	1.700		Aug. 15	-0.557	5.500		Aug. 15	-0.373	-0.200	
Aug. 31	-0.311	-2.500		Aug. 31	-0.374	2.500		Aug. 31	-0.586	3.300		Aug. 31	-0.315	-0.700	
Sept. 15	-0.251	-2.000		Sept. 15	-0.334	2.800		Sept. 15	-0.587	5.000		Sept. 15	-0.382	-0.400	
Sept. 30	-0.256	-1.800		Sept. 30	-0.095	0.500		Sept. 30	-0.436	3.200		Sept. 30	-0.361	-0.700	
Oct. 15	-0.182	-2.500		Oct. 15	-0.514	1.000		Oct. 15	-0.305	3.700		Oct. 15	-0.381	-0.800	
Oct. 31	-0.21	-2.000		Oct. 31	-0.476	0.700		Oct. 31	-0.251	3.500		Oct. 31	-0.380	-0.300	
Nov. 15	-0.226	-2.500		Nov. 15	-0.376	1.000		Nov. 15	-0.145	3.500		Nov. 15	-0.322	-1.300	
Nov. 30	-0.166	-1.700		Nov. 30	-0.445	1.200		Nov. 30	-0.012	4.200		Nov. 30	-0.362	-1.100	
Dec. 15	-0.19	-2.500		Dec. 15	-0.442	2.300		Dec. 15	-0.013	6.000		Dec. 15	-0.318	-0.100	
Dec. 31	-0.128	-3.000		Dec. 31	-0.353	2.200		Dec. 31	0.049	4.500		Dec. 31	-0.300	-0.200	
Jan. 15	0.056	-2.800		Jan. 15	-0.293	1.100		Jan. 15	0.237	4.000		Jan. 15	-0.245	-0.300	
Jan. 31	0.464	-3.800		Jan. 31	-0.022	0.000		Jan. 31	0.547	4.600		Jan. 31	-0.027	-0.600	
Feb. 15	0.818	-3.700		Feb. 15	0.451	0.300		Feb. 15	0.648	6.000		Feb. 15	0.181	-1.500	
Feb. 28	1.948	-3.700		Feb. 28	1.353	0.300		Feb. 28	1.342	4.500		Feb. 28	0.721	-2.200	
Mar. 15	19.864	-1.000		Mar. 15	7.244	2.700		Mar. 15	4.686	3.000		Mar. 15	11.386	-2.100	

1966				1967				1968			
Date	DI	Spread		Date	DI	Spread		Date	DI	Spread	
		¢/bu.				¢/bu.				¢/bu.	
June 15	-0.445	0.000		June 15	-0.716	1.900		June 15	-0.695	-1.800	
June 30	-0.644	-0.200		June 30	-0.718	3.600		June 30	0.612	-1.700	
July 15	-0.654	0.100		July 15	-0.740	2.200		July 15	-0.374	-1.400	
July 31	-0.604	1.000		July 31	-0.687	2.500		July 31	-0.395	-1.700	
Aug. 15	-0.449	1.700		Aug. 15	-0.577	1.200		Aug. 15	-0.407	-2.300	
Aug. 31	-0.303	2.700		Aug. 31	-0.554	1.400		Aug. 31	-0.272	-2.900	
Sept. 15	-0.363	2.500		Sept. 15	-0.445	-0.700		Sept. 15	-0.303	-2.800	
Sept. 30	-0.393	2.800		Sept. 30	-0.378	-2.100		Sept. 30	-0.271	-2.600	
Oct. 15	-0.333	2.200		Oct. 15	-0.275	-1.800		Oct. 15	-0.250	-3.000	
Oct. 31	-0.303	1.500		Oct. 31	-0.139	-1.200		Oct. 31	-0.184	-2.900	
Nov. 15	-0.146	2.000		Nov. 15	-0.146	-1.200		Nov. 15	-0.119	-3.500	
Nov. 30	-0.149	1.500		Nov. 30	-0.125	-2.700		Nov. 30	-0.112	-4.000	
Dec. 15	-0.102	0.200		Dec. 15	-0.113	-2.500		Dec. 15	-0.085	-3.500	
Dec. 31	0.081	-0.200		Dec. 31	-0.015	-2.600		Dec. 31	0.037	-3.200	
Jan. 15	0.331	-1.800		Jan. 15	0.124	-2.700		Jan. 15	0.166	-3.500	
Jan. 31	0.552	-0.700		Jan. 31	0.405	-3.300		Jan. 31	0.314	-3.500	
Feb. 15	0.961	-0.700		Feb. 15	0.728	-3.200		Feb. 15	0.565	-3.300	
Feb. 28	2.658	-1.400		Feb. 28	1.958	-2.800		Feb. 28	1.319	-4.100	
Mar. 15	19.445	-2.100		Mar. 15	21.245	-2.300		Mar. 15	9.858	-2.900	

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In all following tables DI means Disequilibrium Index.









Table 3

MARCH OVER SEPTEMBER CHICAGO WHEAT, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread c/bu.	Date	DI	Spread c/bu.	Date	DI	Spread c/bu.	Date	DI	Spread c/bu.
Oct. 15	-1.163	24.500	Oct. 15	-1.087	11.500	June 15	-1.043	18.000	Oct. 15	-1.121	12.100
Oct. 31	-1.159	24.200	Oct. 31	-1.074	11.500	June 30	-1.049	14.200	Oct. 31	-1.115	12.300
Nov. 15	-1.137	21.000	Nov. 15	-1.048	11.000	July 15	-1.082	14.700	Nov. 15	-1.109	14.400
Nov. 30	-1.156	24.700	Nov. 30	-1.052	10.900	July 31	-1.095	14.600	Nov. 30	-1.116	17.200
Dec. 15	-1.133	26.300	Dec. 15	-1.023	10.700	Aug. 15	-1.077	13.000	Dec. 15	-1.114	17.600
Dec. 31	-1.092	29.100	Dec. 31	-0.996	12.400	Aug. 31	-1.103	15.200	Dec. 31	-1.102	20.000
Jan. 15	-1.077	28.000	Jan. 15	-1.020	11.500	Sept. 15	-1.098	14.000	Jan. 15	-0.968	16.700
Jan. 31	-0.926	25.500	Jan. 31	-0.968	7.200	Sept. 30	-1.101	15.400	Jan. 31	-0.943	17.200
Feb. 15	-0.821	21.300	Feb. 15	-0.975	14.000	Oct. 15	-1.100	15.300	Feb. 15	-0.748	14.200
Feb. 28	-0.635	24.500	Feb. 28	-0.887	11.300	Oct. 31	-1.104	18.200	Feb. 28	-0.500	10.000
Mar. 15	0.320	29.700	Mar. 15	-0.477	18.600	Nov. 15	-1.118	21.400	Mar. 15	-0.213	15.300
						Nov. 30	-1.100	17.500			
						Dec. 15	-1.089	16.000			
						Dec. 31	-1.103	18.700			
						Jan. 15	-1.078	16.100			
						Jan. 31	-1.064	14.000			
						Feb. 15	-1.007	11.800			
						Feb. 28	-0.905	10.800			
						Mar. 15	0.154	16.000			
1962			1963			1964			1965		
Date	DI	Spread c/bu.	Date	DI	Spread c/bu.	Date	DI	Spread c/bu.	Date	DI	Spread c/bu.
Oct. 15	-0.996	-7.000	Oct. 15	-1.137	15.500	July 15	-1.264	31.200	Oct. 15	-1.076	0.500
Oct. 31	-0.957	-6.800	Oct. 31	-1.134	16.500	July 31	-1.260	31.400	Oct. 31	-1.077	1.700
Nov. 15	-0.952	-7.000	Nov. 15	-1.125	15.800	Aug. 15	-1.252	31.000	Nov. 15	-1.046	-0.300
Nov. 30	-0.962	-5.300	Nov. 30	-1.124	16.000	Aug. 31	-1.215	27.500	Nov. 30	-1.047	0.000
Dec. 15	-0.956	-6.300	Dec. 15	-1.137	18.500	Sept. 15	-1.238	32.000	Dec. 15	-1.067	2.800
Dec. 31	-0.909	-7.400	Dec. 31	-1.136	19.000	Sept. 30	-1.263	39.900	Dec. 31	-1.061	3.800
Jan. 15	-0.877	-7.800	Jan. 15	-1.120	17.000	Oct. 15	-1.186	35.200	Jan. 15	-1.041	3.300
Jan. 31	-0.755	-9.300	Jan. 31	-1.109	16.800	Oct. 31	-1.188	38.500	Jan. 31	-1.024	3.900
Feb. 15	-0.640	-10.000	Feb. 15	-1.076	14.300	Nov. 15	-1.180	41.500	Feb. 15	-0.952	1.300
Feb. 28	-0.287	-11.500	Feb. 28	-1.030	12.400	Nov. 30	-1.204	44.900	Feb. 28	-0.907	1.300
Mar. 15	4.993	-6.500	Mar. 15	-0.601	17.700	Dec. 15	-1.179	44.200	Mar. 15	0.442	2.700
						Dec. 31	-1.136	41.000			
						Jan. 15	-1.115	45.800			
						Jan. 31	-1.049	46.800			
						Feb. 15	-1.112	54.000			
						Feb. 28	-0.985	47.700			
						Mar. 15	-0.380	41.500			
1966			1967			1968					
Date	DI	Spread c/bu.	Date	DI	Spread c/bu.	Date	DI	Spread c/bu.			
Oct. 15	-1.157	11.800	Oct. 15	-1.113	9.500	Oct. 15	-1.027	-3.800			
Oct. 31	-1.163	14.600	Oct. 31	-1.077	5.300	Oct. 31	-0.995	-5.100			
Nov. 15	-1.092	11.000	Nov. 15	-1.047	3.400	Nov. 15	-0.966	-6.800			
Nov. 30	-1.078	9.500	Nov. 30	-1.000	-0.200	Nov. 30	-0.937	-8.000			
Dec. 15	-1.028	7.300	Dec. 15	-0.956	-0.200	Dec. 15	-0.931	-7.300			
Dec. 31	-0.965	5.800	Dec. 31	-0.918	0.800	Dec. 31	-0.900	-6.500			
Jan. 15	-0.905	3.900	Jan. 15	-0.913	-0.700	Jan. 15	-0.903	-6.700			
Jan. 31	-0.868	8.300	Jan. 31	-0.823	-2.600	Jan. 31	-0.859	-6.500			
Feb. 15	-0.797	6.800	Feb. 15	-0.712	-2.500	Feb. 15	-0.849	-5.000			
Feb. 28	-0.437	4.100	Feb. 28	-0.446	-3.000	Feb. 28	-0.779	-7.700			
Mar. 15	2.662	2.000	Mar. 15	5.099	-4.500	Mar. 15	4.133	-8.400			



Table 4  
DECEMBER OVER MARCH CHICAGO WHEAT, 1958 - 1967<sup>1</sup>

1958			1959			1960			1961		
Date	DI	Spread c/bu.	Date	DI	Spread c/bu.	Date	DI	Spread c/bu.	Date	DI	Spread c/bu.
Apr. 15	-0.953	-3.200	Apr. 15	-0.907	-3.000	Apr. 15	-0.862	-3.500	Apr. 15	-0.976	-4.200
Apr. 30	-0.924	-3.800	Apr. 30	-0.863	-3.200	Apr. 30	-0.817	-3.500	Apr. 30	-0.847	-5.200
May 15	-0.866	-3.500	May 15	-0.762	-3.000	May 15	-0.779	-3.500	May 15	-0.797	-4.900
May 31	-0.814	-3.800	May 31	-0.746	-3.000	May 31	-0.708	-3.500	May 31	-0.611	-4.900
June 15	-0.747	-2.800	June 15	-0.675	-3.300	June 15	-0.582	-4.200	June 15	-0.293	-5.300
June 30	-0.702	-3.200	June 30	-0.446	-3.200	June 30	-0.495	-4.300	June 30	-0.049	-4.700
July 15	-0.701	-3.800	July 15	-0.426	-2.700	July 15	-0.457	-4.700	July 15	0.245	-5.300
July 31	-0.643	-4.200	July 31	-0.363	-3.000	July 31	-0.400	-4.700	July 31	0.231	-5.200
Aug. 15	-0.631	-5.000	Aug. 15	-0.322	-3.500	Aug. 15	-0.409	-4.700	Aug. 15	0.225	-5.200
Aug. 31	-0.615	-4.600	Aug. 31	-0.266	-4.000	Aug. 31	-0.343	-5.000	Aug. 31	0.071	-5.000
Sept. 15	-0.600	-4.500	Sept. 15	-0.198	-4.000	Sept. 15	-0.326	-5.200	Sept. 15	0.177	-5.000
Sept. 30	-0.554	-4.700	Sept. 30	-0.075	-4.500	Sept. 30	-0.213	-4.500	Sept. 30	0.253	-5.000
Oct. 15	-0.426	-4.500	Oct. 15	0.034	-4.300	Oct. 15	-0.012	-4.700	Oct. 15	0.236	-5.200
Oct. 31	-0.251	-4.500	Oct. 31	0.226	-4.000	Oct. 31	0.198	-4.000	Oct. 31	0.540	-5.700
Nov. 15	0.065	-3.200	Nov. 15	0.364	-3.900	Nov. 15	0.674	-3.400	Nov. 15	1.047	-5.500
Nov. 30	1.059	-3.800	Nov. 30	1.070	-5.000	Nov. 30	1.773	-2.200	Nov. 30	2.623	-4.500
Dec. 15	3.965	-3.700	Dec. 15	18.391	-5.400	Dec. 15	5.645	0.500	Dec. 15	17.028	-4.700

1962			1963			1964			1965		
Date	DI	Spread c/bu.	Date	DI	Spread c/bu.	Date	DI	Spread c/bu.	Date	DI	Spread c/bu.
Apr. 15	-0.857	-2.800	Apr. 15	-0.724	-0.300	Apr. 15	-1.006	-3.900	May 15	-0.786	-2.800
Apr. 30	-0.743	-1.300	Apr. 30	-0.595	-0.500	Apr. 30	-0.792	-4.100	May 31	-0.445	-2.700
May 15	-0.526	-1.800	May 15	-0.558	-1.000	May 15	-0.667	-4.500	June 15	0.555	-2.700
May 31	-0.438	-2.500	May 31	-0.227	0.000	May 31	0.076	-4.500	June 30	6.541	-0.700
June 15	-0.421	-1.400	June 15	-0.303	-1.000	June 15	4.107	-4.100	July 15	17.778	-1.400
June 30	-0.484	-2.500	June 30	-0.425	-1.800	June 30	13.566	-4.500	July 31	33.744	-2.500
July 15	-0.518	-3.200	July 15	-0.504	-3.000	July 15	24.531	-4.000	Aug. 15	61.986	-0.200
July 31	-0.513	-3.700	July 31	-0.587	-3.200	July 31	42.772	-3.800	Aug. 31	106.659	0.400
Aug. 15	-0.462	-5.000	Aug. 15	-0.583	-3.000	Aug. 15	49.487	-4.300	Sept. 15	154.151	-0.300
Aug. 31	-0.461	-5.000	Aug. 31	-0.563	-3.300	Aug. 31	53.674	-4.600	Sept. 30	205.125	1.000
Sept. 15	-0.379	-4.000	Sept. 15	-0.486	-2.000	Sept. 15	55.334	-5.500	Oct. 15	229.058	-1.500
Sept. 30	-0.447	-4.800	Sept. 30	-0.201	-1.800	Sept. 30	77.861	-4.800	Oct. 31	281.039	-2.700
Oct. 15	-0.046	-4.200	Oct. 15	0.053	-0.200	Oct. 15	80.571	-4.000	Nov. 15	372.354	-2.300
Oct. 31	0.155	-4.000	Oct. 31	0.401	-0.800	Oct. 31	84.607	-3.200	Nov. 30	520.304	-1.000
Nov. 15	0.225	-3.800	Nov. 15	0.654	-1.500	Nov. 15	92.446	-4.500	Dec. 15	2528.715	-1.700
Nov. 30	1.331	-3.800	Nov. 30	1.269	-3.000	Nov. 30	175.513	-5.500			
Dec. 15	10.610	-1.800	Dec. 15	19.604	-1.000	Dec. 15	440.288	-5.000			

1966			1967		
Date	DI	Spread c/bu.	Date	DI	Spread c/bu.
Apr. 15	-0.852	-2.900	Apr. 15	-0.910	-4.000
Apr. 30	-0.767	-2.500	Apr. 30	-0.789	-4.000
May 15	-0.733	-2.500	May 15	-0.758	-3.700
May 31	-0.399	-2.700	May 31	-0.657	-3.700
June 15	-0.181	-3.400	June 15	-0.565	-4.000
June 30	-0.058	-3.500	June 30	-0.865	-4.900
July 15	0.139	-4.300	July 15	-0.488	-4.700
July 31	0.202	-4.200	July 31	-0.433	-4.800
Aug. 15	0.261	-4.500	Aug. 15	-0.341	-5.700
Aug. 31	0.308	-6.400	Aug. 31	-0.287	-5.200
Sept. 15	0.670	-7.000	Sept. 15	-0.221	-5.700
Sept. 30	0.529	-6.700	Sept. 30	-0.187	-5.500
Oct. 15	0.516	-6.200	Oct. 15	-0.114	-5.700
Oct. 31	0.709	-6.500	Oct. 31	-0.052	-6.000
Nov. 15	1.171	-6.900	Nov. 15	0.239	-5.700
Nov. 30	2.278	-7.400	Nov. 30	1.126	-6.000
Dec. 15	21.612	-4.400	Dec. 15	6.750	-5.500

1

This spread compares months traded in different calendar years; e.g., December 1958 over March 1959. The labels given for each spread refer to the calendar year in which December trades, thus the spread labeled 1958 compares December 1958 with March 1959. Also since data for 1969 were not available, only 10 spreads could be considered.



Table 5

MAY OVER JULY CHICAGO WHEAT, 1958 - 1968

1958		DI	Spread ¢/bu.
Date			
Aug.	15	-1.032	16.000
Aug.	31	-1.002	16.900
Sept.	15	-0.979	16.000
Sept.	30	-0.959	16.900
Oct.	15	-0.928	20.000
Oct.	31	-0.897	22.800
Nov.	15	-0.859	21.800
Nov.	30	-0.917	22.500
Dec.	15	-0.911	23.800
Dec.	31	-0.882	23.800
Jan.	15	-0.878	24.500
Jan.	31	-0.876	24.500
Feb.	15	-0.828	21.000
Feb.	28	-0.879	24.700
Mar.	15	-0.896	29.200
Mar.	31	-0.865	27.500
Apr.	15	-0.801	31.800
Apr.	30	-0.802	32.500
May	15	-0.590	35.400

1959			
Date	DI		Spread ¢/bu.
Aug. 15	-0.952		7.800
Aug. 31	-0.932		9.800
Sept. 15	-0.943		11.100
Sept. 30	-0.949		12.400
Oct. 15	-0.965		12.500
Oct. 31	-0.968		12.700
Nov. 15	-0.937		11.100
Nov. 30	-0.937		11.200
Dec. 15	-0.942		10.000
Dec. 31	-0.942		9.500
Jan. 15	-0.926		9.800
Jan. 31	-0.926		11.500
Feb. 15	-0.931		13.900
Feb. 28	-0.960		14.800
Mar. 15	-0.949		16.500
Mar. 31	-0.996		22.600
Apr. 15	-0.955		16.000
Apr. 30	-0.819		4.700
May 15	-0.201		1.500

1960			
Date	DI		Spread c/bu.
June 15	-0.564		16.900
June 30	-0.772		14.200
July 15	-0.945		15.000
July 31	-0.980		15.300
Aug. 15	-0.966		14.300
Aug. 31	-1.006		15.500
Sept. 15	-1.007		14.800
Sept. 30	-1.022		16.300
Oct. 15	-1.016		15.400
Oct. 31	-1.011		17.200
Nov. 15	-1.034		19.800
Nov. 30	-1.009		16.000
Dec. 15	-1.000		16.700
Dec. 31	-1.009		18.700
Jan. 15	-0.982		17.800
Jan. 31	-0.981		16.400
Feb. 15	-0.976		16.100
Feb. 28	-0.977		16.000
Mar. 15	-0.985		20.000
Mar. 31	-0.996		23.700
Apr. 15	-0.945		22.300
Apr. 30	-0.900		25.200
May 15	-0.830		21.500

1961		DI	Spread ¢/bu.
Date			
Aug.	15	-1.061	9.600
Aug.	31	-1.051	10.400
Sept.	15	-1.045	11.200
Sept.	30	-1.050	11.600
Oct.	15	-1.046	13.100
Oct.	31	-1.029	13.000
Nov.	15	-0.996	14.800
Nov.	30	-0.980	16.200
Dec.	15	-0.969	16.800
Dec.	31	-0.956	18.700
Jan.	15	-0.925	18.000
Jan.	31	-0.878	18.700
Feb.	15	-0.860	17.000
Feb.	28	-0.811	14.500
Mar.	15	-0.840	17.400
Mar.	31	-0.730	11.100
Apr.	15	-0.578	4.500
Apr.	30	-0.262	0.700
May	15	3.595	-1.500

1962		
Date	DI	Spread ¢/bu.
Aug. 15	-0.925	0.000
Aug. 31	-0.861	-2.000
Sept. 15	-0.849	-1.200
Sept. 30	-0.849	-1.200
Oct. 15	-0.846	-1.800
Oct. 31	-0.820	-1.500
Nov. 15	-0.809	-1.500
Nov. 30	-0.827	-0.800
Dec. 15	-0.811	-1.000
Dec. 31	-0.802	-1.800
Jan. 15	-0.800	-2.300
Jan. 31	-0.817	-2.400
Feb. 15	-0.808	-2.900
Feb. 28	-0.786	-3.700
Mar. 15	-0.770	-2.300
Mar. 31	-0.747	-2.200
Apr. 15	-0.633	-1.000
Apr. 30	-0.541	-1.800
May 15	0.107	-0.500

1963		
Date	DI	Spread c/bu.
Sept. 30	-1.075	14,400
Oct. 15	-0.998	17,500
Oct. 31	-0.984	18,800
Nov. 15	-0.950	17,800
Nov. 30	-0.937	17,800
Dec. 15	-0.943	19,200
Dec. 31	-0.935	19,800
Jan. 15	-0.882	18,400
Jan. 31	-0.890	19,000
Feb. 15	-0.563	16,000
Feb. 28	-0.887	14,300
Mar. 15	-0.892	17,000
Mar. 31	-0.889	17,000
Apr. 15	-0.883	21,600
Apr. 30	-0.907	24,300
May 15	-0.743	17,200

1964	Date	DI	Spread ¢/bu.
July	15	-1.159	27.800
July	31	-1.071	27.000
Aug.	15	-1.039	27.500
Aug.	31	-1.009	26.200
Sept.	15	-0.995	29.200
Sept.	30	-1.045	38.500
Oct.	15	-0.991	33.300
Oct.	31	-1.017	36.100
Nov.	15	-1.033	39.000
Nov.	30	-1.085	42.200
Dec.	15	-1.047	39.500
Dec.	31	-1.033	38.300
Jan.	15	-1.016	43.500
Jan.	31	-1.017	44.000
Feb.	15	-1.082	50.000
Feb.	28	-1.085	45.000
Mar.	15	-1.044	40.700
Mar.	31	-1.087	46.100
Apr.	15	-1.153	51.400
Apr.	30	-1.076	49.400
May	15	-0.965	57.200

1965		DI	Spread ¢/bu.
Date			
Aug. 15	-1.039	3,800	
Aug. 31	-1.032	3,800	
Sept. 15	-1.019	4,600	
Sept. 30	-0.996	4,200	
Oct. 15	-0.978	3,400	
Oct. 31	-0.983	4,000	
Nov. 15	-0.948	3,300	
Nov. 30	-0.940	3,500	
Dec. 15	-0.953	5,100	
Dec. 31	-0.942	6,200	
Jan. 15	-0.889	5,900	
Jan. 31	-0.860	6,500	
Feb. 15	-0.832	5,000	
Feb. 28	-0.867	5,700	
Mar. 15	-0.838	6,700	
Mar. 31	-0.818	6,300	
Apr. 15	-0.805	7,500	
Apr. 30	-0.697	5,400	
May 15	-0.444	7,500	

1966		DI	Spread ¢/bu.
Date			
Aug.	15	-1.069	9.500
Aug.	31	-1.056	12.000
Sept.	15	-1.025	11.000
Sept.	30	-1.032	11.600
Oct.	15	-1.012	11.500
Oct.	31	-1.023	15.200
Nov.	15	-0.959	10.800
Nov.	30	-0.931	9.500
Dec.	15	-0.894	8.700
Dec.	31	-0.854	7.600
Jan.	15	-0.856	7.200
Jan.	31	-0.868	10.700
Feb.	15	-0.870	9.200
Feb.	28	-0.847	7.400
Mar.	15	-0.824	6.100
Mar.	31	-0.777	2.500
Apr.	15	-0.712	4.700
Apr.	30	-0.477	3.300
May	15	-0.123	0.700

1967			
Date	DI	Spread	c/bu.
Aug. 15	-1.015	10.500	
Aug. 31	-1.013	11.800	
Sept. 15	-0.998	12.800	
Sept. 30	-0.982	11.800	
Oct. 15	-1.002	13.700	
Oct. 31	-0.961	8.700	
Nov. 15	-0.923	7.100	
Nov. 30	-0.880	4.500	
Dec. 15	-0.837	4.500	
Dec. 31	-0.848	6.000	
Jan. 15	-0.849	4.500	
Jan. 31	-0.828	3.000	
Feb. 15	-0.804	3.000	
Feb. 28	-0.768	2.300	
Mar. 15	-0.668	1.100	
Mar. 31	-0.542	0.000	
Apr. 15	-0.415	1.500	
Apr. 30	-0.066	-1.200	
May 15	8.352	-3.000	

1968			
Date	DI	Spread ¢/bu.	
Aug. 15	-0.991	0.800	
Aug. 31	-0.963	1.100	
Sept. 15	-0.936	1.500	
Sept. 30	-0.930	2.900	
Oct. 15	-0.907	2.000	
Oct. 31	-0.888	0.700	
Nov. 15	-0.874	-0.300	
Nov. 30	-0.861	-1.000	
Dec. 15	-0.868	-0.500	
Dec. 31	-0.850	0.200	
Jan. 15	-0.851	0.000	
Jan. 31	-0.849	0.000	
Feb. 15	-0.863	1.000	
Feb. 28	-0.868	-0.600	
Mar. 15	-0.270	-2.100	
Mar. 31	-0.755	-3.000	
Apr. 15	-0.678	-2.700	
Apr. 30	-0.440	-4.000	
May 15	8.075	-2.700	









Table 7

MAY OVER DECEMBER CHICAGO WHEAT, 1958 - 1968

1958				1959				1960				1961			
Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.	
Jan. 15	-1.111	17.800		Jan. 15	-1.061	3.300		Jan. 15	-1.111	10.500		Jan. 15	-1.027	10.100	
Jan. 31	-1.044	16.800		Jan. 31	-1.040	5.100		Jan. 31	-1.094	8.900		Jan. 31	-0.967	10.500	
Feb. 15	-0.970	12.500		Feb. 15	-0.982	7.500		Feb. 15	-1.073	8.800		Feb. 15	-0.737	8.200	
Feb. 28	-0.972	16.700		Feb. 28	-0.964	8.000		Feb. 28	-1.056	8.600		Feb. 28	-0.636	5.500	
Mar. 15	-0.924	21.000		Mar. 15	-0.920	9.500		Mar. 15	-1.057	12.300		Mar. 15	-0.651	9.000	
Mar. 31	-0.867	19.600		Mar. 31	-0.899	15.600		Mar. 31	-1.052	16.500		Mar. 31	-0.399	2.400	
Apr. 15	-0.844	23.000		Apr. 15	-0.786	8.500		Apr. 15	-0.976	14.800		Apr. 15	-0.046	-4.300	
Apr. 30	-0.729	24.300		Apr. 30	-0.575	-3.000		Apr. 30	-0.856	17.700		Apr. 30	0.684	-8.500	
May 15	-0.364	27.000		May 15	0.551	-6.200		May 15	-0.707	14.000		May 15	12.030	-10.900	
1962				1963				1964				1965			
Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.	
Jan. 15	-0.930	-10.300		Jan. 15	-1.073	11.400		Jan. 15	-1.254	37.500		Jan. 15	-1.072	-1.000	
Jan. 31	-0.721	-10.500		Jan. 31	-1.061	12.000		Jan. 31	-1.196	37.200		Jan. 31	-1.066	0.300	
Feb. 15	-0.634	-11.300		Feb. 15	-1.021	9.200		Feb. 15	-1.234	43.300		Feb. 15	-1.023	-1.700	
Feb. 28	-0.575	-12.100		Feb. 28	-0.990	8.000		Feb. 28	-1.199	38.200		Feb. 28	-1.030	-1.000	
Mar. 15	-0.366	-10.400		Mar. 15	-0.926	11.000		Mar. 15	-1.143	33.700		Mar. 15	-1.004	0.000	
Mar. 31	-0.258	-10.400		Mar. 31	-0.863	11.000		Mar. 31	-1.129	39.700		Mar. 31	-0.995	-0.500	
Apr. 15	0.004	-8.000		Apr. 15	-0.780	16.300		Apr. 15	-1.140	45.200		Apr. 15	-0.948	0.700	
Apr. 30	0.140	-8.000		Apr. 30	-0.820	19.000		Apr. 30	-1.052	43.100		Apr. 30	-0.871	-1.400	
May 15	1.613	-7.500		May 15	-0.592	11.000		May 15	-0.935	50.700		May 15	-0.743	0.900	
1966				1967				1968							
Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.					
Jan. 15	-1.052	1.000		Jan. 15	-1.016	-3.000		Jan. 15	-0.976	-8.200					
Jan. 31	-1.027	4.000		Jan. 31	-0.942	-4.300		Jan. 31	-0.874	-8.000					
Feb. 15	-0.992	2.500		Feb. 15	-0.886	-4.300		Feb. 15	-0.881	-7.000					
Feb. 28	-0.956	0.800		Feb. 28	-0.836	-5.000		Feb. 28	-0.869	-8.600					
Mar. 15	-0.899	-0.600		Mar. 15	-0.602	-8.100		Mar. 15	0.020	-11.000					
Mar. 31	-0.758	-4.500		Mar. 31	-0.782	-8.800		Mar. 31	-0.542	-12.300					
Apr. 15	-0.608	-2.500		Apr. 15	0.071	-7.500		Apr. 15	-0.410	-11.700					
Apr. 30	-0.167	-3.700		Apr. 30	0.689	-10.700		Apr. 30	0.049	-13.500					
May 15	0.817	-6.800		May 15	21.442	-12.500		May 15	20.341	-13.000					







Table 9

JULY OVER DECEMBER CHICAGO WHEAT, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Jan. 15	-0.815	-6.700	Jan. 15	-0.841	-6.500	Jan. 15	-0.900	-7.300	Jan. 15	-0.512	-7.900
Jan. 31	-0.587	-7.700	Jan. 31	-0.652	-6.400	Jan. 31	-0.832	-7.500	Jan. 31	-0.356	-8.200
Feb. 15	-0.458	-8.500	Feb. 15	-0.239	-6.400	Feb. 15	-0.691	-7.300	Feb. 15	0.275	-8.800
Feb. 28	-0.322	-8.000	Feb. 28	0.040	-6.800	Feb. 28	-0.556	-7.400	Feb. 28	0.657	-9.000
Mar. 15	-0.074	-8.200	Mar. 15	0.244	-7.000	Mar. 15	-0.464	-7.700	Mar. 15	0.739	-8.400
Mar. 31	0.030	-7.900	Mar. 31	0.728	-7.000	Mar. 31	-0.310	-7.200	Mar. 31	1.008	-8.700
Apr. 15	0.213	-11.500	Apr. 15	1.175	-7.500	Apr. 15	-0.117	-7.500	Apr. 15	1.218	-8.800
Apr. 30	0.227	-8.200	Apr. 30	1.142	-7.700	Apr. 30	0.215	-7.500	Apr. 30	1.334	-9.200
May 15	0.412	-8.400	May 15	0.991	-7.700	May 15	0.453	-7.500	May 15	1.970	-9.400
May 31	0.908	-8.500	May 31	1.337	-8.200	May 31	1.015	-8.400	May 31	2.622	-9.700
June 15	1.268	-7.700	June 15	1.922	-9.200	June 15	1.821	-8.500	June 15	3.061	-10.200
June 30	2.666	-8.800	June 30	4.647	-10.000	June 30	4.129	-8.200	June 30	5.837	-10.000
July 15	8.581	-5.200	July 15	20.328	-9.000	July 15	11.515	-9.000	July 15	14.996	-9.700
1962			1963			1964			1965		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Jan. 15	-0.615	-8.000	Jan. 15	-0.778	-7.000	Jan. 15	-0.867	-6.000	Jan. 15	-0.969	-6.900
Jan. 31	0.552	-8.100	Jan. 31	-0.709	-7.000	Jan. 31	-0.621	-6.800	Jan. 31	-0.916	-6.200
Feb. 15	0.939	-8.400	Feb. 15	-0.833	-6.800	Feb. 15	-0.571	-6.700	Feb. 15	-0.792	-6.700
Feb. 28	1.049	-8.400	Feb. 28	-0.437	-6.300	Feb. 28	-0.461	-6.800	Feb. 28	-0.792	-6.700
Mar. 15	1.791	-8.100	Mar. 15	-0.082	-6.000	Mar. 15	-0.358	-7.000	Mar. 15	-0.658	-6.500
Mar. 31	1.977	-8.200	Mar. 31	0.195	-6.000	Mar. 31	-0.106	-6.400	Mar. 31	-0.657	-6.800
Apr. 15	1.787	-7.000	Apr. 15	0.504	-5.300	Apr. 15	0.150	-6.200	Apr. 15	-0.476	-6.800
Apr. 30	1.568	-6.200	Apr. 30	0.456	-5.300	Apr. 30	0.158	-6.300	Apr. 30	-0.437	-6.800
May 15	1.448	-7.000	May 15	0.477	-6.200	May 15	0.122	-6.500	May 15	-0.442	-6.600
May 31	2.316	-7.500	May 31	2.032	-5.800	May 31	0.513	-7.800	May 31	-0.362	-6.700
June 15	3.621	-7.600	June 15	2.211	-7.500	June 15	0.409	-8.900	June 15	0.011	-6.400
June 30	4.556	-8.200	June 30	3.070	-7.700	June 30	0.963	-8.800	June 30	0.305	-8.300
July 15	29.355	-9.100	July 15	11.838	-8.700	July 15	1.823	-7.300	July 15	1.512	-6.300
1966			1967			1968					
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.			
Jan. 15	-0.867	-6.200	Jan. 15	-0.811	-7.500	Jan. 15	-0.714	-8.200			
Jan. 31	-0.655	-6.700	Jan. 31	-0.500	-7.300	Jan. 31	-0.121	-8.000			
Feb. 15	-0.525	-6.700	Feb. 15	-0.310	-7.300	Feb. 15	-0.086	-8.000			
Feb. 28	-0.429	-6.600	Feb. 28	-0.215	-7.300	Feb. 28	0.011	-8.000			
Mar. 15	-0.259	-6.700	Mar. 15	0.215	-9.200	Mar. 15	0.445	-8.900			
Mar. 31	0.127	-7.000	Mar. 31	-0.488	-8.800	Mar. 31	0.876	-9.300			
Apr. 15	0.359	-7.200	Apr. 15	0.856	-9.000	Apr. 15	0.856	-9.000			
Apr. 30	0.611	-7.000	Apr. 30	0.871	-9.500	Apr. 30	0.936	-9.500			
May 15	1.126	-7.500	May 15	1.520	-9.500	May 15	1.474	-10.300			
May 31	2.689	-8.300	May 31	2.037	-9.300	May 31	1.994	-9.500			
June 15	6.643	-8.100	June 15	3.084	-10.000	June 15	2.278	-10.000			
June 30	9.842	-9.200	June 30	5.818	-11.100	June 30	3.835	-10.700			
July 15	28.754	-9.200	July 15	19.691	-9.600	July 15	93.099	-8.500			



Table 10

SEPTEMBER OVER DECEMBER CHICAGO WHEAT, 1958 - 1968

1958				1959				1960				1961			
Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.
Jan. 15	-0.678	-4.200		Jan. 15	-0.739	-4.500		Jan. 15	-0.861	-4.900		Jan. 15	-0.411	-5.100	
Jan. 31	-0.470	-4.700		Jan. 31	-0.475	-4.500		Jan. 31	-0.778	-5.000		Jan. 31	0.061	-5.700	
Feb. 15	-0.187	-5.100		Feb. 15	0.119	-4.500		Feb. 15	-0.622	-4.800		Feb. 15	1.101	-6.000	
Feb. 28	-0.095	-5.000		Feb. 28	0.286	-4.800		Feb. 28	-0.390	-4.600		Feb. 28	1.417	-6.000	
Mar. 15	0.203	-5.200		Mar. 15	0.327	-5.100		Mar. 15	-0.165	-4.900		Mar. 15	1.792	-5.800	
Mar. 31	0.215	-5.400		Mar. 31	0.610	-5.000		Mar. 31	0.154	-5.000		Mar. 31	1.937	-6.000	
Apr. 15	0.494	-5.800		Apr. 15	0.753	-4.900		Apr. 15	0.348	-5.200		Apr. 15	1.857	-5.800	
Apr. 30	0.625	-5.200		Apr. 30	1.024	-5.000		Apr. 30	0.836	-5.300		Apr. 30	2.093	-6.000	
May 15	0.495	-5.500		May 15	0.792	-5.000		May 15	1.104	-5.300		May 15	2.316	-6.100	
May 31	0.641	-5.500		May 31	1.777	-5.000		May 31	1.658	-5.700		May 31	2.985	-6.200	
June 15	0.553	-5.500		June 15	1.361	-5.200		June 15	1.827	-5.700		June 15	2.592	-7.000	
June 30	0.620	-5.800		June 30	1.149	-6.000		June 30	2.322	-5.700		June 30	1.637	-6.300	
July 15	0.919	-5.000		July 15	1.326	-5.500		July 15	1.509	-6.300		July 15	2.226	-6.700	
July 31	1.073	-5.500		July 31	2.158	-5.300		July 31	1.975	-6.000		July 31	2.217	-7.000	
Aug. 15	2.330	-6.300		Aug. 15	2.525	-5.800		Aug. 15	3.874	-6.300		Aug. 15	3.552	-6.500	
Aug. 31	5.374	-6.500		Aug. 31	4.705	-6.500		Aug. 31	7.003	-6.800		Aug. 31	7.248	-6.700	
Sept. 15	17.967	-5.800		Sept. 15	31.938	-6.000		Sept. 15	52.880	-5.800		Sept. 15	20.805	-5.600	

1962				1963				1964				1965			
Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.
Jan. 15	-0.418	-5.300		Jan. 15	0.177	-4.500		Jan. 15	-0.812	-4.300		Jan. 31	-0.919	-4.600	
Jan. 31	0.595	-5.000		Jan. 31	0.636	-4.800		Jan. 31	-0.530	-5.000		Jan. 31	-0.780	-4.200	
Feb. 15	0.761	-5.000		Feb. 15	1.165	-4.800		Feb. 15	-0.461	-4.700		Feb. 15	-0.619	-4.500	
Feb. 28	0.677	-4.900		Feb. 28	1.783	-4.100		Feb. 28	-0.360	-5.000		Feb. 28	-0.603	-4.500	
Mar. 15	1.102	-4.900		Mar. 15	1.805	-4.000		Mar. 15	-0.192	-4.800		Mar. 15	-0.428	-4.800	
Mar. 31	1.350	-5.200		Mar. 31	2.573	-4.200		Mar. 31	-0.040	-4.500		Mar. 31	-0.369	-4.500	
Apr. 15	1.458	-4.600		Apr. 15	2.539	-3.800		Apr. 15	0.183	-4.500		Apr. 15	-0.062	-4.800	
Apr. 30	1.497	-4.500		Apr. 30	2.361	-4.000		Apr. 30	0.221	-4.500		Apr. 30	0.013	-4.800	
May 15	1.055	-4.500		May 15	1.904	-4.700		May 15	0.094	-4.800		May 15	-0.088	-4.500	
May 31	2.086	-5.000		May 31	1.751	-2.300		May 31	0.334	-5.500		May 31	-0.039	-4.500	
June 15	1.866	-5.100		June 15	1.413	-5.500		June 15	-0.006	-7.200		June 15	-0.154	-4.300	
June 30	1.929	-5.200		June 30	1.179	-6.000		June 30	-0.147	-5.700		June 30	0.320	-5.000	
July 15	1.757	-5.800		July 15	1.097	-6.500		July 15	-0.263	-5.200		July 15	0.200	-5.000	
July 31	2.459	-6.300		July 31	2.029	-5.700		July 31	-0.269	-5.900		July 31	0.264	-4.500	
Aug. 15	3.907	-6.500		Aug. 15	2.853	-5.600		Aug. 15	-0.025	-5.200		Aug. 15	0.390	-5.000	
Aug. 31	6.281	-7.000		Aug. 31	5.468	-6.500		Aug. 31	0.383	-5.800		Aug. 31	0.555	-5.900	
Sept. 15	82.269	-6.300		Sept. 15	36.156	-3.700		Sept. 15	0.875	-2.500		Sept. 15	7.961	-4.200	

1966				1967				1968			
Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.
Jan. 15	-0.814	-4.700		Jan. 15	-0.746	-5.000		Jan. 15	-0.592	-5.000	
Jan. 31	-0.585	-5.000		Jan. 31	-0.428	-5.000		Jan. 31	0.040	-5.000	
Feb. 15	-0.451	-5.000		Feb. 15	-0.285	-5.000		Feb. 15	0.100	-5.300	
Feb. 28	-0.381	-4.700		Feb. 28	-0.118	-4.800		Feb. 28	0.291	-5.000	
Mar. 15	-0.164	-4.700		Mar. 15	0.329	-5.900		Mar. 15	0.888	-5.500	
Mar. 31	0.165	-5.000		Mar. 31	-0.443	-5.400		Mar. 31	1.290	-5.800	
Apr. 15	0.295	-5.200		Apr. 15	1.098	-5.700		Apr. 15	0.754	-5.700	
Apr. 30	0.562	-5.000		Apr. 30	1.143	-6.000		Apr. 30	1.407	-6.000	
May 15	0.782	-5.100		May 15	1.421	-5.800		May 15	2.010	-6.300	
May 31	1.267	-5.800		May 31	1.531	-6.000		May 31	2.139	-5.700	
June 15	2.684	-5.300		June 15	1.623	-6.200		June 15	2.175	-6.000	
June 30	2.729	-5.500		June 30	1.360	-6.900		June 30	1.178	-6.700	
July 15	3.455	-5.900		July 15	1.186	-6.800		July 15	1.163	-6.000	
July 31	3.859	-6.800		July 31	2.406	-6.600		July 31	1.787	-6.300	
Aug. 15	5.721	-6.700		Aug. 15	4.106	-6.800		Aug. 15	2.060	-6.100	
Aug. 31	8.896	-8.100		Aug. 31	5.870	-6.500		Aug. 31	5.335	-6.100	
Sept. 15	68.503	-6.400		Sept. 15	47.964	-5.500		Sept. 15	11.594	-5.100	





Table 11  
MARCH OVER MAY CHICAGO CORN, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
June 15	-0.931	-2.800	June 15	-0.859	-3.100	June 15	-1.021	-1.700	June 30	-0.734	-2.000
June 30	-0.868	-2.700	June 30	-0.826	-3.700	June 30	-0.971	-1.800	July 15	-0.712	-2.000
July 15	-0.776	-2.500	July 15	-0.824	-2.800	July 15	-0.811	-1.300	July 31	-0.675	-2.000
July 31	-0.746	-2.700	July 31	-0.701	-2.900	July 31	-0.735	-1.200	Aug. 15	-0.657	-2.300
Aug. 15	-0.688	-3.100	Aug. 15	-0.713	-2.500	Aug. 15	-0.555	-1.500	Aug. 31	-0.673	-2.500
Aug. 31	-0.427	-2.800	Aug. 31	-0.648	-2.400	Aug. 31	-0.528	-1.800	Sept. 15	-0.565	-2.500
Sept. 15	-0.471	-3.200	Sept. 15	-0.638	-3.100	Sept. 15	-0.456	-2.000	Sept. 30	-0.501	-3.000
Sept. 30	-0.198	-3.100	Sept. 30	-0.554	-3.500	Sept. 30	-0.431	-2.100	Oct. 15	-0.496	-3.000
Oct. 15	-0.261	-2.600	Oct. 15	-0.407	-3.500	Oct. 15	-0.371	-2.900	Oct. 31	-0.432	-3.000
Oct. 31	-0.155	-3.000	Oct. 31	0.197	-3.300	Oct. 31	-0.405	-2.500	Nov. 15	-0.454	-3.700
Nov. 15	-0.146	-3.000	Nov. 15	0.438	-2.700	Nov. 15	-0.395	-2.200	Nov. 30	-0.378	-3.800
Nov. 30	-0.389	-2.800	Nov. 30	0.400	-2.500	Nov. 30	-0.427	-2.500	Dec. 15	-0.272	-3.500
Dec. 15	-0.498	-3.200	Dec. 15	0.378	-2.600	Dec. 15	-0.444	-3.300	Dec. 31	-0.175	-2.100
Dec. 31	-0.427	-3.000	Dec. 31	0.756	-2.000	Dec. 31	-0.331	-3.100	Jan. 15	0.149	-3.700
Jan. 15	-0.411	-3.500	Jan. 15	1.148	-1.000	Jan. 15	-0.223	-3.000	Jan. 31	0.393	-4.300
Jan. 31	-0.121	-3.700	Jan. 31	1.673	-1.200	Jan. 31	-0.027	-2.800	Feb. 15	1.111	-4.500
Feb. 15	0.218	-4.000	Feb. 15	2.388	-1.300	Feb. 15	0.212	-3.200	Feb. 28	2.353	-4.300
Feb. 28	1.138	-3.300	Feb. 28	3.009	-1.800	Feb. 28	1.243	-4.000	Mar. 15	11.315	-3.200
Mar. 15	6.002	-1.000	Mar. 15	8.233	-0.800	Mar. 15	10.284	-2.500			

1962			1963			1964			1965		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
June 15	-0.642	-3.000	June 15	-0.663	-2.000	June 15	-0.786	-1.900	June 15	-0.763	-2.500
June 30	-0.548	-3.100	June 30	-0.635	-2.000	June 30	-0.622	-2.300	June 30	-0.660	-2.500
July 15	-0.566	-3.100	July 15	-0.461	-2.700	July 15	-0.607	-2.800	July 15	-0.561	-2.500
July 31	-0.513	-3.100	July 31	-0.418	-2.400	July 31	-0.465	-1.900	July 31	-0.491	-2.400
Aug. 15	-0.443	-3.000	Aug. 15	-0.377	-2.600	Aug. 15	-0.488	-1.900	Aug. 15	-0.515	-2.500
Aug. 31	-0.421	-3.700	Aug. 31	-0.279	-2.800	Aug. 31	-0.467	-2.000	Aug. 31	-0.557	-2.000
Sept. 15	-0.257	-3.700	Sept. 15	-0.370	-2.300	Sept. 15	-0.482	-1.700	Sept. 15	-0.544	-1.800
Sept. 30	-0.256	-3.700	Sept. 30	-0.173	-2.800	Sept. 30	-0.433	-1.100	Sept. 30	-0.477	-2.100
Oct. 15	-0.238	-3.800	Oct. 15	-0.310	-2.100	Oct. 15	-0.378	-2.000	Oct. 15	-0.491	-2.200
Oct. 31	-0.255	-3.700	Oct. 31	-0.340	-2.700	Oct. 31	-0.292	-3.000	Oct. 31	-0.462	-2.800
Nov. 15	-0.261	-3.500	Nov. 15	-0.369	-3.000	Nov. 15	-0.119	-2.800	Nov. 15	-0.354	-2.500
Nov. 30	-0.258	-2.900	Nov. 30	-0.441	-2.900	Nov. 30	-0.241	-3.100	Nov. 30	-0.332	-2.000
Dec. 15	-0.173	-3.300	Dec. 15	-0.377	-1.900	Dec. 15	-0.161	-2.400	Dec. 15	-0.295	-2.400
Dec. 31	-0.168	-3.300	Dec. 31	-0.343	-2.000	Dec. 31	-0.125	-2.200	Dec. 31	-0.280	-2.200
Jan. 15	-0.085	-3.800	Jan. 15	-0.210	-1.600	Jan. 15	-0.043	-2.500	Jan. 15	-0.127	-2.500
Jan. 31	0.169	-3.700	Jan. 31	0.083	-1.500	Jan. 31	0.135	-2.000	Jan. 31	0.075	-2.500
Feb. 15	0.415	-3.900	Feb. 15	0.341	-1.000	Feb. 15	0.530	-2.500	Feb. 15	0.586	-2.500
Feb. 28	1.046	-3.700	Feb. 28	1.043	-0.900	Feb. 28	1.173	-2.800	Feb. 28	1.670	-2.700
Mar. 15	3.845	-2.000	Mar. 15	10.307	-1.400	Mar. 15	5.895	-2.300	Mar. 15	10.014	-2.100

1966			1967			1968		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
June 15	-0.790	-2.600	June 15	-0.579	-2.500	June 15	-0.757	-3.100
June 30	-0.786	-2.400	June 30	-0.664	-2.000	June 30	-0.520	-2.900
July 15	-0.722	-2.600	July 15	-0.705	-2.000	July 15	-0.427	-2.700
July 31	-0.759	-2.500	July 31	-0.637	-2.000	July 31	-0.370	-2.800
Aug. 15	-0.702	-2.500	Aug. 15	-0.632	-2.700	Aug. 15	-0.420	-3.000
Aug. 31	-0.677	-2.500	Aug. 31	-0.598	-2.700	Aug. 31	-0.401	-3.200
Sept. 15	-0.619	-2.500	Sept. 15	-0.526	-3.200	Sept. 15	-0.410	-3.000
Sept. 30	-0.578	-2.700	Sept. 30	-0.422	-3.000	Sept. 30	-0.433	-3.100
Oct. 15	-0.495	-2.700	Oct. 15	-0.394	-2.600	Oct. 15	-0.382	-3.300
Oct. 31	-0.452	-3.000	Oct. 31	-0.309	-3.200	Oct. 31	-0.299	-3.000
Nov. 15	-0.425	-3.000	Nov. 15	-0.289	-3.200	Nov. 15	-0.262	-3.100
Nov. 30	-0.357	-2.800	Nov. 30	-0.222	-2.900	Nov. 30	-0.324	-3.800
Dec. 15	-0.391	-2.500	Dec. 15	-0.164	-2.800	Dec. 15	-0.367	-4.100
Dec. 31	-0.308	-2.700	Dec. 31	-0.119	-3.000	Dec. 31	-0.273	-4.000
Jan. 15	-0.215	-2.000	Jan. 15	0.004	-2.800	Jan. 15	-0.171	-3.800
Jan. 31	0.140	-2.000	Jan. 31	0.332	-2.900	Jan. 31	0.165	-4.000
Feb. 15	0.315	-2.100	Feb. 15	0.914	-3.500	Feb. 15	0.362	-4.000
Feb. 28	1.054	-3.000	Feb. 28	1.472	-3.600	Feb. 28	1.348	-4.200
Mar. 15	16.855	-2.200	Mar. 15	11.177	-3.200	Mar. 15	8.774	-3.500



Table 12  
MARCH OVER JULY CHICAGO CORN, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Aug. 15	-1.003	-5.300	Aug. 31	-0.994	-4.700	Aug. 15	-0.989	-3.200	Aug. 31	-1.019	-4.300
Aug. 31	-0.922	-5.400	Sept. 15	-0.980	-5.000	Aug. 31	-0.984	-3.300	Sept. 15	-1.008	-4.400
Sept. 15	-0.916	-5.500	Sept. 30	-0.924	-5.500	Sept. 15	-0.885	-3.600	Sept. 30	-0.993	-5.200
Sept. 30	-0.805	-6.000	Oct. 15	-0.833	-5.900	Sept. 30	-0.854	-4.000	Oct. 15	-0.956	-5.500
Oct. 15	-0.747	-4.700	Oct. 31	-0.521	-5.600	Oct. 15	-0.794	-4.700	Oct. 31	-0.917	-5.000
Oct. 31	-0.615	-5.200	Nov. 15	-0.335	-4.000	Oct. 31	-0.774	-4.300	Nov. 15	-0.835	-7.000
Nov. 15	-0.604	-4.900	Nov. 30	-0.327	-4.300	Nov. 15	-0.781	-3.900	Nov. 30	-0.733	-6.500
Nov. 30	-0.727	-5.000	Dec. 15	-0.331	-4.400	Nov. 30	-0.762	-4.000	Dec. 15	-0.679	-6.100
Dec. 15	-0.752	-5.700	Dec. 31	-0.075	-3.500	Dec. 15	-0.767	-4.800	Dec. 31	-0.575	-6.800
Dec. 31	-0.721	-6.500	Jan. 15	0.370	-1.900	Dec. 31	-0.717	-4.800	Jan. 15	-0.266	-7.000
Jan. 15	-0.623	-6.500	Jan. 31	0.863	-2.000	Jan. 15	-0.651	-4.800	Jan. 31	0.030	-7.800
Jan. 31	-0.320	-7.000	Feb. 15	1.523	-2.100	Jan. 31	-0.564	-5.000	Feb. 15	0.839	-8.400
Feb. 15	0.061	-7.000	Feb. 28	1.693	-3.000	Feb. 15	-0.464	-5.400	Feb. 28	1.992	-7.700
Feb. 28	0.906	-6.500	Mar. 15	4.986	-1.800	Feb. 28	0.098	-7.000	Mar. 15	11.312	-6.400
Mar. 15	5.452	-4.000				Mar. 15	5.299	-5.100			
1962			1963			1964			1965		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Aug. 15	-0.955	-5.800	Aug. 15	-0.925	-5.300	Aug. 15	-0.884	-4.200	Aug. 15	-0.987	-4.200
Aug. 31	-0.918	-6.900	Aug. 31	-0.860	-5.300	Aug. 31	-0.874	-4.100	Aug. 31	-0.920	-3.200
Sept. 15	-0.778	-7.200	Sept. 15	-0.852	-4.500	Sept. 15	-0.764	-3.700	Sept. 15	-0.662	-2.800
Sept. 30	-0.185	-7.400	Sept. 30	-0.759	-4.800	Sept. 30	-0.689	-2.400	Sept. 30	-0.822	-3.500
Oct. 15	-0.556	-7.300	Oct. 15	-0.773	-4.000	Oct. 15	-0.652	-3.000	Oct. 15	-0.812	-3.600
Oct. 31	-0.441	-7.100	Oct. 31	-0.736	-4.700	Oct. 31	-0.580	-4.900	Oct. 31	-0.736	-4.500
Nov. 15	-0.483	-6.500	Nov. 15	-0.700	-5.000	Nov. 15	-0.482	-4.900	Nov. 15	-0.666	-4.200
Nov. 30	-0.457	-5.700	Nov. 30	-0.687	-5.000	Nov. 30	-0.537	-5.000	Nov. 30	-0.646	-3.200
Dec. 15	-0.307	-6.300	Dec. 15	-0.622	-4.000	Dec. 15	-0.495	-4.300	Dec. 15	-0.568	-3.500
Dec. 31	-0.098	-6.500	Dec. 31	-0.558	-3.000	Dec. 31	-0.488	-4.100	Dec. 31	-0.550	-2.700
Jan. 15	0.152	-7.000	Jan. 15	-0.332	-2.500	Jan. 15	-0.396	-4.100	Jan. 15	-0.411	-3.500
Jan. 31	0.596	-7.200	Jan. 31	0.006	-2.500	Jan. 31	-0.206	-3.800	Jan. 31	-0.236	-3.700
Feb. 15	1.317	-7.400	Feb. 15	0.244	-2.000	Feb. 15	0.171	-4.500	Feb. 15	0.160	-3.700
Feb. 28	2.471	-7.200	Feb. 28	0.773	-1.500	Feb. 28	0.899	-5.300	Feb. 28	0.985	-4.000
Mar. 15	7.402	-5.500	Mar. 15	9.150	-2.700	Mar. 15	4.834	-4.500	Mar. 15	7.841	-3.100
1966			1967			1968					
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.			
Aug. 15	-0.998	-4.000	Aug. 15	-0.952	-3.700	Aug. 15	-0.963	-5.300			
Aug. 31	-0.950	-4.300	Aug. 31	-0.890	-4.700	Aug. 31	-0.907	-5.700			
Sept. 15	-0.924	-4.600	Sept. 15	-0.819	-5.400	Sept. 15	-0.839	-5.000			
Sept. 30	-0.870	-4.600	Sept. 30	-0.732	-5.000	Sept. 30	-0.745	-5.600			
Oct. 15	-0.847	-4.500	Oct. 15	-0.671	-4.200	Oct. 15	-0.480	-5.800			
Oct. 31	-0.782	-4.700	Oct. 31	-0.571	-4.800	Oct. 31	-0.466	-5.100			
Nov. 15	-0.730	-4.300	Nov. 15	-0.540	-5.000	Nov. 15	-0.472	-5.900			
Nov. 30	-0.728	-3.800	Nov. 30	-0.473	-4.700	Nov. 30	-0.528	-6.500			
Dec. 15	-0.647	-3.500	Dec. 15	-0.392	-4.300	Dec. 15	-0.554	-7.000			
Dec. 31	-0.550	-3.800	Dec. 31	-0.266	-4.500	Dec. 31	-0.438	-7.000			
Jan. 15	-0.436	-2.500	Jan. 15	-0.163	-3.800	Jan. 15	-0.271	-6.800			
Jan. 31	-0.168	-3.000	Jan. 31	0.151	-4.400	Jan. 31	0.102	-7.000			
Feb. 15	-0.017	-3.100	Feb. 15	0.688	-5.800	Feb. 15	-0.612	-7.300			
Feb. 28	0.593	-4.800	Feb. 28	1.352	-6.300	Feb. 28	1.387	-8.000			
Mar. 15	18.249	-4.200	Mar. 15	12.778	-6.000	Mar. 15	10.475	-7.000			



MARCH OVER SEPTEMBER CHICAGO CORN, 1958 - 1968

1968		
Date	DI	Spread c/bu.
Oct. 15	-0.913	-5.400
Oct. 31	-0.857	-5.400
Nov. 15	-0.854	-7.000
Nov. 30	-0.849	-7.200
Dec. 15	-0.873	-8.300
Dec. 31	-0.832	-8.300
Jan. 15	-0.776	-8.200
Jan. 31	-0.635	-8.500
Feb. 15	-0.507	-9.000
Feb. 28	0.085	-10.300
Mar. 15	3.910	-9.000



Table 14

DECEMBER OVER MARCH CHICAGO CORN, 1958 - 1967<sup>1</sup>

1958			1959			1960			1961		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Apr. 15	-0.959	-3.500	Apr. 15	-0.977	-4.300	Apr. 15	-1.015	-4.200	Apr. 15	-0.900	-4.000
Apr. 30	-0.908	-3.800	Apr. 30	-0.906	-3.900	Apr. 30	-0.958	-3.900	Apr. 30	-0.866	-3.600
May 15	-0.900	-3.700	May 15	-0.857	-4.000	May 15	-0.981	-3.800	May 15	-0.793	-3.800
May 31	-0.904	-3.500	May 31	-0.802	-4.000	May 31	-0.865	-3.800	May 31	-0.721	-4.000
June 15	-0.844	-3.600	June 15	-0.699	-3.700	June 15	-0.864	-3.800	June 15	-0.506	-4.400
June 30	-0.853	-3.600	June 30	-0.608	-3.700	June 30	-0.813	-4.000	June 30	-0.469	-5.000
July 15	-0.753	-4.500	July 15	-0.584	-3.600	July 15	-0.702	-4.200	July 15	-0.349	-4.200
July 31	-0.685	-4.100	July 31	-0.552	-3.800	July 31	-0.655	-4.000	July 31	-0.272	-4.900
Aug. 15	-0.610	-4.200	Aug. 15	-0.521	-4.000	Aug. 15	-0.681	-4.200	Aug. 15	-0.189	-4.100
Aug. 31	-0.600	-4.300	Aug. 31	-0.504	-3.400	Aug. 31	-0.647	-3.900	Aug. 31	-0.208	-4.700
Sept. 15	-0.538	-4.200	Sept. 15	-0.461	-3.500	Sept. 15	-0.641	-4.200	Sept. 15	-0.127	-4.900
Sept. 30	-0.506	-3.700	Sept. 30	-0.465	-3.900	Sept. 30	-0.598	-4.300	Sept. 30	-0.044	-4.800
Oct. 15	-0.488	-4.300	Oct. 15	-0.444	-4.500	Oct. 15	-0.525	-4.000	Oct. 15	0.013	-4.800
Oct. 31	-0.445	-3.900	Oct. 31	-0.260	-4.200	Oct. 31	-0.361	-4.900	Oct. 31	0.074	-5.300
Nov. 15	-0.167	-3.000	Nov. 15	0.070	-4.300	Nov. 15	0.319	-5.000	Nov. 15	0.279	-3.500
Nov. 30	-0.005	-3.000	Nov. 30	0.469	-4.000	Nov. 30	1.979	-5.500	Nov. 30	1.264	-3.300
Dec. 15	1.113	-0.900	Dec. 15	4.478	-3.900	Dec. 15	9.662	-5.100	Dec. 15	10.808	-3.000

1962			1963			1964			1965		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Apr. 15	-0.908	-3.700	Apr. 15	-1.019	-2.700	Apr. 15	-0.955	-3.300	Apr. 15	-1.006	-3.700
Apr. 30	-0.892	-3.800	Apr. 30	-0.975	-2.700	Apr. 30	-0.924	-3.300	Apr. 30	-0.960	-4.000
May 15	-0.824	-4.000	May 15	-0.934	-3.000	May 15	-0.896	-3.800	May 15	-0.964	-3.600
May 31	-0.739	-3.600	May 31	-0.866	-2.900	May 31	-0.867	-3.300	May 31	-0.908	-3.600
June 15	-0.668	-3.500	June 15	-0.826	-3.100	June 15	-0.862	-3.700	June 15	-0.854	-3.800
June 30	-0.582	-3.700	June 30	-0.776	-2.700	June 30	-0.796	-3.700	June 30	-0.786	-3.700
July 15	-0.608	-3.500	July 15	-0.699	-3.200	July 15	-0.741	-4.000	July 15	-0.796	-3.800
July 31	-0.507	-3.600	July 31	-0.643	-3.000	July 31	-0.647	-3.800	July 31	-0.689	-4.000
Aug. 15	-0.508	-3.400	Aug. 15	-0.574	-3.100	Aug. 15	-0.544	-3.800	Aug. 15	-0.659	-4.000
Aug. 31	-0.508	-3.700	Aug. 31	-0.568	-2.800	Aug. 31	-0.429	-4.000	Aug. 31	-0.663	-4.000
Sept. 15	-0.526	-3.700	Sept. 15	-0.587	-3.500	Sept. 15	-0.447	-3.700	Sept. 15	-0.588	-4.300
Sept. 30	-0.475	-3.500	Sept. 30	-0.482	-3.900	Sept. 30	-0.395	-3.800	Sept. 30	-0.549	-4.000
Oct. 15	-0.376	-3.300	Oct. 15	-0.477	-3.800	Oct. 15	-0.286	-3.800	Oct. 15	-0.534	-4.100
Oct. 31	0.149	-2.800	Oct. 31	-0.195	-4.000	Oct. 31	-0.048	-4.200	Oct. 31	-0.482	-4.300
Nov. 15	0.167	-2.700	Nov. 15	-0.010	-4.000	Nov. 15	0.121	-4.500	Nov. 15	-0.205	-3.700
Nov. 30	0.998	-2.500	Nov. 30	0.498	-4.300	Nov. 30	0.846	-4.300	Nov. 30	0.071	-4.000
Dec. 15	4.132	-2.000	Dec. 15	3.577	-2.700	Dec. 15	15.947	-4.300	Dec. 15	3.784	-2.000

1966			1967		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Apr. 15	-0.934	-3.700	Apr. 15	-0.844	-4.500
Apr. 30	-0.891	-3.700	Apr. 30	-0.800	-4.400
May 15	-0.856	-3.700	May 15	-0.036	-4.200
May 31	-0.752	-3.900	May 31	-0.757	-4.500
June 15	-0.599	-3.900	June 15	-0.746	-4.200
June 30	-0.385	-4.000	June 30	-0.693	-4.500
July 15	-0.313	-4.700	July 15	-0.667	-4.300
July 31	-0.276	-4.800	July 31	-0.658	-4.400
Aug. 15	-0.135	-4.700	Aug. 15	-0.550	-4.800
Aug. 31	-0.096	-5.100	Aug. 31	-0.481	-4.800
Sept. 15	-0.019	-5.600	Sept. 15	-0.499	-4.900
Sept. 30	0.033	-5.000	Sept. 30	-0.425	-5.200
Oct. 15	0.157	-4.600	Oct. 15	-0.431	-5.200
Oct. 31	0.256	-5.500	Oct. 31	-0.375	-5.400
Nov. 15	0.685	-6.000	Nov. 15	-0.093	-4.500
Nov. 30	1.199	-5.700	Nov. 30	0.549	-3.600
Dec. 15	5.421	-3.600	Dec. 15	4.656	-4.500

<sup>1</sup> This spread compares months traded in different calendar years; e.g., December 1958 over March 1959. The labels given for each spread refer to the calendar year in which December trades, thus the spread labeled 1958 compares December 1958 with March 1959. Also since data for 1969 were not available, only 10 spreads could be considered.





Table 15  
MAY OVER JULY CHICAGO CORN, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Aug. 15	-0.973	-2.200	Aug. 31	-0.938	-2.300	Aug. 15	-0.920	-1.700	Aug. 31	-0.994	-1.800
Aug. 31	-0.854	-2.600	Sept. 15	-0.912	-1.900	Aug. 31	-0.918	-1.500	Sept. 15	-0.979	-1.900
Sept. 15	-0.832	-2.300	Sept. 30	-0.815	-2.000	Sept. 15	-0.760	-1.600	Sept. 30	-0.967	-2.200
Sept. 30	-0.758	-2.900	Oct. 15	-0.717	-2.400	Sept. 30	-0.723	-1.900	Oct. 15	-0.899	-2.500
Oct. 15	-0.653	-2.100	Oct. 31	-0.608	-2.300	Oct. 15	-0.664	-1.800	Oct. 31	-0.840	-2.000
Oct. 31	-0.548	-2.200	Nov. 15	-0.549	-1.300	Oct. 31	-0.608	-1.800	Nov. 15	-0.705	-3.300
Nov. 15	-0.539	-1.900	Nov. 30	-0.529	-1.800	Nov. 15	-0.623	-1.700	Nov. 30	-0.576	-2.700
Nov. 30	-0.548	-2.200	Dec. 15	-0.524	-1.800	Nov. 30	-0.571	-1.500	Dec. 15	-0.565	-2.600
Dec. 15	-0.503	-2.500	Dec. 31	-0.486	-1.500	Dec. 15	-0.752	-1.500	Dec. 31	-0.489	-4.700
Dec. 31	-0.517	-3.500	Jan. 15	-0.380	-0.900	Dec. 31	-0.573	-1.700	Jan. 15	-0.372	-3.300
Jan. 15	-0.367	-3.000	Jan. 31	-0.325	-0.800	Jan. 15	-0.552	-1.800	Jan. 31	-0.272	-3.500
Jan. 31	-0.239	-3.300	Feb. 15	-0.280	-0.800	Jan. 31	-0.556	-2.200	Feb. 15	-0.137	-3.900
Feb. 15	-0.142	-3.000	Feb. 28	-0.351	-1.200	Feb. 15	-0.566	-2.200	Feb. 28	-0.118	-3.400
Feb. 28	-0.120	-3.200	Mar. 15	-0.379	-1.000	Feb. 28	-0.523	-3.000	Mar. 15	-0.012	-3.200
Mar. 15	-0.091	-3.000	Mar. 31	-0.288	-0.800	Mar. 15	-0.457	-2.600	Mar. 31	0.274	-3.500
Mar. 31	0.029	-2.300	Apr. 15	-0.040	0.200	Mar. 31	-0.342	-2.700	Apr. 15	0.517	-3.700
Apr. 15	0.371	-0.300	Apr. 30	0.797	0.100	Apr. 15	-0.035	-2.500	Apr. 30	2.120	-4.400
Apr. 30	1.173	1.100	May 15	2.860	0.500	Apr. 30	0.659	-2.500	May 15	15.191	-3.000
May 15	3.588	3.000				May 15	7.942	-3.000			

1962			1963			1964			1965		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Aug. 15	-0.910	-2.800	Aug. 15	-0.867	-2.700	Aug. 15	-0.749	-2.200	Aug. 15	-0.941	-1.700
Aug. 31	-0.861	-3.200	Aug. 31	-0.800	-2.500	Aug. 31	-0.739	-2.100	Aug. 31	-0.777	-1.200
Sept. 15	-0.709	-3.500	Sept. 15	-0.750	-2.200	Sept. 15	-0.524	-2.000	Sept. 15	-0.659	-1.000
Sept. 30	-0.508	-3.700	Sept. 30	-0.706	-2.000	Sept. 30	-0.431	-1.300	Sept. 30	-0.636	-1.400
Oct. 15	-0.429	-3.500	Oct. 15	-0.659	-1.900	Oct. 15	-0.428	-1.000	Oct. 15	-0.607	-1.400
Oct. 31	-0.262	-3.400	Oct. 31	-0.594	-2.000	Oct. 31	-0.408	-1.900	Oct. 31	-0.499	-1.700
Nov. 15	-0.310	-3.000	Nov. 15	-0.521	-2.000	Nov. 15	-0.416	-2.100	Nov. 15	-0.478	-1.700
Nov. 30	-0.276	-2.800	Nov. 30	-0.436	-2.100	Nov. 30	-0.393	-1.900	Nov. 30	-0.461	-1.200
Dec. 15	-0.173	-3.000	Dec. 15	-0.387	-2.100	Dec. 15	-0.400	-1.900	Dec. 15	-0.383	-1.100
Dec. 31	0.069	-3.200	Dec. 31	-0.320	-1.000	Dec. 31	-0.417	-1.900	Dec. 31	-0.369	-0.500
Jan. 15	0.244	-3.200	Jan. 15	-0.157	-0.900	Jan. 15	-0.374	-1.600	Jan. 15	-0.329	-1.000
Jan. 31	0.349	-3.500	Jan. 31	-0.083	-1.000	Jan. 31	-0.308	-1.800	Jan. 31	-0.298	-1.200
Feb. 15	0.622	-3.500	Feb. 15	-0.087	-1.000	Feb. 15	-0.247	-2.000	Feb. 15	-0.283	-1.200
Feb. 28	0.682	-3.500	Feb. 28	-0.153	-0.600	Feb. 28	-0.140	-2.500	Feb. 28	-0.275	-1.300
Mar. 15	0.720	-3.500	Mar. 15	-0.129	-1.300	Mar. 15	-0.172	-2.200	Mar. 15	-0.223	-1.000
Mar. 31	0.971	-3.500	Mar. 31	0.100	-1.500	Mar. 31	0.085	-1.500	Mar. 31	-0.121	-0.300
Apr. 15	1.712	-3.400	Apr. 15	0.370	-0.800	Apr. 15	0.253	-1.300	Apr. 15	0.175	-1.000
Apr. 30	2.868	-4.000	Apr. 30	0.868	-1.500	Apr. 30	0.737	-1.000	Apr. 30	0.860	-1.300
May 15	26.589	-2.600	May 15	3.911	-0.700	May 15	4.176	0.500	May 15	6.216	0.000

1966			1967			1968		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Aug. 15	-0.923	-1.500	Aug. 15	-0.829	-1.000	Aug. 15	-0.924	-2.300
Aug. 31	-0.795	-1.800	Aug. 31	-0.706	-2.000	Aug. 31	-0.840	-2.500
Sept. 15	-0.767	-1.900	Sept. 15	-0.611	-2.200	Sept. 15	-0.719	-2.000
Sept. 30	-0.668	-1.900	Sept. 30	-0.532	-2.000	Sept. 30	-0.547	-2.500
Oct. 15	-0.679	-1.800	Oct. 15	-0.452	-1.600	Oct. 15	-0.165	-2.500
Oct. 31	-0.592	-1.700	Oct. 31	-0.380	-1.600	Oct. 31	-0.244	-2.100
Nov. 15	-0.521	-1.300	Nov. 15	-0.355	-1.800	Nov. 15	-0.292	-2.800
Nov. 30	-0.566	-1.000	Nov. 30	-0.327	-1.800	Nov. 30	-0.310	-2.700
Dec. 15	-0.412	-1.000	Dec. 15	-0.277	-1.500	Dec. 15	-0.306	-2.900
Dec. 31	-0.347	-1.100	Dec. 31	-0.174	-1.500	Dec. 31	-0.238	-3.000
Jan. 15	-0.281	-0.500	Jan. 15	-0.175	-1.000	Jan. 15	-0.133	-3.000
Jan. 31	-0.279	-1.000	Jan. 31	-0.148	-1.500	Jan. 31	-0.066	-3.000
Feb. 15	-0.264	-1.000	Feb. 15	-0.131	-2.300	Feb. 15	-0.721	-3.300
Feb. 28	-0.240	-1.800	Feb. 28	-0.060	-2.700	Feb. 28	0.008	-3.800
Mar. 15	0.058	-2.000	Mar. 15	0.119	-2.800	Mar. 15	0.165	-3.500
Mar. 31	0.426	-1.200	Mar. 31	0.472	-3.700	Mar. 31	0.469	-3.500
Apr. 15	0.606	-1.000	Apr. 15	1.026	-3.500	Apr. 15	1.639	-3.700
Apr. 30	1.387	-0.300	Apr. 30	2.037	-4.200	Apr. 30	2.344	-3.400
May 15	4.838	0.000	May 15	22.083	-2.300	May 15	15.711	-2.000



Table 16  
MAY OVER SEPTEMBER CHICAGO CORN, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread c/bu.	Date	DI	Spread c/bu.	Date	DI	Spread c/bu.	Date	DI	Spread c/bu.
Nov. 15	-1.010	-2.500	Oct. 15	-0.959	-2.000	Oct. 15	-1.016	1.200	Nov. 15	-1.043	-2.000
Nov. 30	-1.003	-1.700	Oct. 31	-0.741	-2.000	Oct. 31	-0.978	1.100	Nov. 30	-0.990	-1.500
Dec. 15	-0.924	-2.000	Nov. 15	-0.646	0.000	Nov. 15	-0.959	1.700	Dec. 15	-0.927	-1.000
Dec. 31	-0.834	-4.200	Nov. 30	-0.702	-0.500	Nov. 30	-0.911	1.700	Dec. 31	-0.891	-3.900
Jan. 15	-0.757	-2.800	Dec. 15	-0.704	-0.800	Dec. 15	-0.893	1.300	Jan. 15	-0.817	-3.600
Jan. 31	-0.737	-3.800	Dec. 31	-0.708	-1.200	Dec. 31	-0.893	1.300	Jan. 31	-0.719	-4.500
Feb. 15	-0.700	-2.700	Jan. 15	-0.621	0.800	Jan. 15	-0.878	1.600	Feb. 15	-0.595	-5.500
Feb. 28	-0.644	-3.100	Jan. 31	-0.582	1.100	Jan. 31	-0.884	1.000	Feb. 28	-0.567	-3.700
Mar. 15	-0.562	-4.000	Feb. 15	-0.428	0.500	Feb. 15	-0.857	0.300	Mar. 15	-0.605	-2.800
Mar. 31	-0.476	-2.300	Feb. 28	-0.508	0.900	Feb. 28	-0.843	-0.700	Mar. 31	-0.456	-5.500
Apr. 15	-0.238	0.600	Mar. 15	-0.515	1.400	Mar. 15	-0.805	0.000	Apr. 15	-0.395	-5.500
Apr. 30	0.126	2.200	Mar. 31	-0.451	2.200	Mar. 31	-0.740	0.700	Apr. 30	0.209	-6.500
May 15	1.560	5.800	Apr. 15	-0.322	3.200	Apr. 15	-0.628	1.900	May 15	5.304	-5.700
			Apr. 30	0.005	3.900	Apr. 30	-0.443	0.900			
			May 15	1.131	3.700	May 15	2.627	-1.200			

1962			1963			1964			1965		
Date	DI	Spread c/bu.	Date	DI	Spread c/bu.	Date	DI	Spread c/bu.	Date	DI	Spread c/bu.
Oct. 15	-0.983	-4.700	Oct. 15	-1.034	-1.300	Oct. 15	-0.975	1.900	Oct. 15	-1.023	0.800
Oct. 31	-0.942	-4.400	Oct. 31	-0.924	0.000	Oct. 31	-0.924	0.000	Oct. 31	-0.930	0.400
Nov. 15	-0.903	-3.100	Nov. 15	-0.929	-0.300	Nov. 15	-0.920	-0.700	Nov. 15	-0.942	-0.300
Nov. 30	-0.839	-4.100	Nov. 30	-0.901	-0.800	Nov. 30	-0.917	-0.800	Nov. 30	-0.917	1.400
Dec. 15	-0.794	-4.900	Dec. 15	-0.787	-0.500	Dec. 15	-0.878	-0.600	Dec. 15	-0.870	1.700
Dec. 31	-0.658	-5.000	Dec. 31	-0.772	0.700	Dec. 31	-0.876	-0.800	Dec. 31	-0.819	3.700
Jan. 15	-0.548	-4.700	Jan. 15	-0.664	1.600	Jan. 15	-0.853	-0.100	Jan. 15	-0.831	2.500
Jan. 31	-0.460	-5.300	Jan. 31	-0.712	0.500	Jan. 31	-0.804	-0.300	Jan. 31	-0.818	2.000
Feb. 15	-0.376	-5.700	Feb. 15	-0.735	0.500	Feb. 15	-0.769	-1.400	Feb. 15	-0.819	2.000
Feb. 28	-0.317	-6.500	Feb. 28	-0.729	1.400	Feb. 28	-0.703	-2.500	Feb. 28	-0.787	1.500
Mar. 15	-0.222	-6.200	Mar. 15	-0.687	-0.100	Mar. 15	-0.702	-2.200	Mar. 15	-0.780	3.000
Mar. 31	-0.085	-4.800	Mar. 31	-0.642	-0.200	Mar. 31	-0.632	-1.000	Mar. 31	-0.772	4.500
Apr. 15	0.273	-6.200	Apr. 15	-0.545	0.600	Apr. 15	-0.568	-0.700	Apr. 15	-0.664	4.100
Apr. 30	1.151	-6.500	Apr. 30	-0.255	0.000	Apr. 30	-0.330	0.600	Apr. 30	-0.384	3.500
May 15	16.266	-5.100	May 15	1.258	0.800	May 15	1.174	3.400	May 15	1.763	6.000

1966			1967			1968		
Date	DI	Spread c/bu.	Date	DI	Spread c/bu.	Date	DI	Spread c/bu.
Oct. 15	-1.066	0.500	Oct. 15	-1.036	3.000	Oct. 15	-0.844	-2.100
Oct. 31	-1.065	1.100	Oct. 31	-0.974	4.700	Oct. 31	-0.789	-2.400
Nov. 15	-1.014	1.800	Nov. 15	-0.967	4.000	Nov. 15	-0.804	-3.900
Nov. 30	-1.002	3.300	Nov. 30	-0.960	3.400	Nov. 30	-0.781	-3.400
Dec. 15	-0.954	3.100	Dec. 15	-0.920	4.200	Dec. 15	-0.806	-4.200
Dec. 31	-0.923	2.800	Dec. 31	-0.894	4.000	Dec. 31	-0.781	-4.300
Jan. 15	-0.897	3.500	Jan. 15	-0.900	4.300	Jan. 15	-0.745	-4.400
Jan. 31	-0.865	2.800	Jan. 31	-0.866	3.000	Jan. 31	-0.709	-4.500
Feb. 15	-0.852	2.600	Feb. 15	-0.843	0.200	Feb. 15	-0.658	-5.000
Feb. 28	-0.810	2.200	Feb. 28	-0.767	-1.300	Feb. 28	-0.565	-6.100
Mar. 15	-0.652	0.700	Mar. 15	-0.701	-2.500	Mar. 15	-0.531	-5.500
Mar. 31	-0.518	0.600	Mar. 31	-0.577	-5.000	Mar. 31	-0.390	-5.700
Apr. 15	-0.378	1.600	Apr. 15	-0.343	-5.200	Apr. 15	0.174	-5.800
Apr. 30	-0.081	2.700	Apr. 30	0.059	-7.000	Apr. 30	0.531	-5.400
May 15	1.509	3.300	May 15	8.178	-3.500	May 15	7.469	-4.000



Table 17

MAY OVER DECEMBER CHICAGO CORN, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Jan. 15	-1.103	1.800	Feb. 15	-1.022	3.200	Jan. 15	-1.174	8.200	Jan. 15	-1.011	-0.700
Jan. 31	-1.030	0.000	Feb. 28	-1.023	4.100	Jan. 31	-1.102	7.000	Jan. 31	-0.872	-2.600
Feb. 15	-0.998	0.700	Mar. 15	-1.019	5.400	Feb. 15	-1.116	6.700	Feb. 15	-0.696	-3.800
Feb. 28	-0.933	-0.200	Mar. 31	-0.968	7.200	Feb. 28	-1.051	5.800	Feb. 28	-0.631	-0.500
Mar. 15	-0.881	-0.400	Apr. 15	-0.816	9.700	Mar. 15	-1.041	6.800	Mar. 15	-0.677	0.200
Mar. 31	-0.821	1.500	Apr. 30	-0.564	9.400	Mar. 31	-1.035	8.200	Mar. 31	-0.314	-5.700
Apr. 15	-0.783	7.000	May 15	0.326	11.000	Apr. 15	-0.977	8.800	Apr. 15	-0.117	-8.000
Apr. 30	-0.615	6.500				Apr. 30	-0.799	7.900	Apr. 30	1.004	-8.400
May 15	0.048	10.000				May 15	0.994	5.600	May 15	11.304	-8.700

1962			1963			1964			1965		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Jan. 15	-1.018	-2.700	Jan. 15	-0.921	4.400	Jan. 15	-1.102	3.500	Jan. 15	-1.113	8.500
Jan. 31	-0.876	-5.000	Jan. 31	-0.756	2.900	Jan. 31	-1.075	3.500	Jan. 31	-1.068	9.500
Feb. 15	-0.771	-5.900	Feb. 15	-0.684	3.300	Feb. 15	-0.983	1.900	Feb. 15	-1.044	9.500
Feb. 28	-0.730	-6.700	Feb. 28	-0.700	4.200	Feb. 28	-0.869	0.300	Feb. 28	-1.041	9.500
Mar. 15	-0.646	-7.400	Mar. 15	-0.640	2.900	Mar. 15	-0.833	0.600	Mar. 15	-0.967	10.900
Mar. 31	-0.536	-4.300	Mar. 31	-0.494	2.900	Mar. 31	-0.611	1.300	Mar. 31	-0.899	12.300
Apr. 15	-0.325	-6.000	Apr. 15	-0.309	3.800	Apr. 15	-0.498	3.000	Apr. 15	-0.758	12.000
Apr. 30	-0.008	-6.700	Apr. 30	0.021	3.200	Apr. 30	-0.248	5.300	Apr. 30	-0.453	11.000
May 15	6.859	-6.400	May 15	1.924	5.300	May 15	2.112	6.300	May 15	2.695	15.100

1966			1967			1968		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Jan. 15	-1.095	7.300	Jan. 15	-1.156	11.600	Jan. 15	-1.048	-3.000
Jan. 31	-1.092	9.000	Jan. 31	-1.079	9.800	Jan. 31	-0.969	-4.100
Feb. 15	-1.057	8.500	Feb. 15	-1.027	7.200	Feb. 15	-0.886	-5.800
Feb. 28	-1.018	6.200	Feb. 28	-0.982	6.500	Feb. 28	-0.814	-6.400
Mar. 15	-0.933	6.000	Mar. 15	-0.842	4.600	Mar. 15	-0.779	-5.700
Mar. 31	-0.743	5.100	Mar. 31	-0.630	-0.500	Mar. 31	-0.657	-6.500
Apr. 15	-0.595	5.700	Apr. 15	-0.413	-2.500	Apr. 15	-0.210	-7.000
Apr. 30	-0.320	6.200	Apr. 30	0.191	-6.900	Apr. 30	0.095	-6.400
May 15	2.011	6.000	May 15	10.824	-3.300	May 15	6.078	-4.600



Table 18  
JULY OVER SEPTEMBER CHICAGO CORN, 1958 - 1968

1958				1959				1960				1961			
Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.	
Nov. 15	-0.973	-0.600		Oct. 15	-0.774	0.400		Oct. 15	-0.904	3.000		Nov. 15	-1.028	1.300	
Nov. 30	-0.953	0.500		Oct. 31	-0.364	0.300		Oct. 31	-0.845	2.900		Nov. 30	-0.917	1.200	
Dec. 15	-0.825	0.500		Nov. 15	-0.256	1.300		Nov. 15	-0.790	3.400		Dec. 15	-0.787	1.600	
Dec. 31	-0.675	-0.700		Nov. 30	-0.391	1.300		Nov. 30	-0.724	3.200		Dec. 31	-0.795	0.800	
Jan. 15	-0.643	0.200		Dec. 15	-0.405	1.000		Dec. 15	-0.691	2.800		Jan. 15	-0.729	-0.300	
Jan. 31	-0.689	-0.500		Dec. 31	-0.459	0.300		Dec. 31	-0.692	3.000		Jan. 31	-0.653	-1.000	
Feb. 15	-0.687	0.300		Jan. 15	-0.424	1.700		Jan. 15	-0.677	3.400		Feb. 15	-0.585	-1.600	
Feb. 28	-0.640	0.100		Jan. 31	-0.422	1.900		Jan. 31	-0.691	3.200		Feb. 28	-0.564	-0.300	
Mar. 15	-0.571	-1.000		Feb. 15	-0.277	1.300		Feb. 15	-0.635	2.500		Mar. 15	-0.648	0.400	
Mar. 31	-0.548	0.000		Feb. 28	-0.301	2.100		Feb. 28	-0.657	2.300		Mar. 31	-0.627	-2.000	
Apr. 15	-0.511	0.900		Mar. 15	-0.277	2.400		Mar. 15	-0.637	2.600		Apr. 15	-0.656	-1.800	
Apr. 30	-0.555	1.200		Mar. 31	-0.293	3.000		Mar. 31	-0.622	3.400		Apr. 30	-0.669	-2.100	
May 15	-0.543	2.800		Apr. 15	-0.367	3.000		Apr. 15	-0.658	4.400		May 15	-0.663	-2.700	
May 31	-0.394	4.000		Apr. 30	-0.527	3.800		Apr. 30	-0.728	3.400		May 31	-0.600	-2.700	
June 15	-0.245	6.000		May 15	-0.549	3.200		May 15	-0.684	1.800		June 15	-0.415	-3.400	
June 30	0.444	4.900		May 31	-0.564	3.800		May 31	-0.608	1.000		June 30	0.381	-3.600	
July 15	2.215	4.600		June 15	-0.474	4.700		June 15	-0.485	0.800		July 15	16.305	-2.900	
				June 30	-0.176	5.200		June 30	0.519	-1.000					
				July 15	1.120	5.200		July 15	2.881	0.800					
1962				1963				1964				1965			
Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.	
Oct. 15	-0.964	-1.200		Oct. 15	-0.986	0.600		Oct. 15	-0.903	2.900		Oct. 15	-0.952	2.200	
Oct. 31	-0.927	-1.000		Oct. 31	-0.751	2.000		Oct. 31	-0.848	1.900		Oct. 31	-0.818	2.100	
Nov. 15	-0.864	-0.100		Nov. 15	-0.806	1.700		Nov. 15	-0.843	1.400		Nov. 15	-0.852	1.400	
Nov. 30	-0.794	-1.300		Nov. 30	-0.804	1.300		Nov. 30	-0.846	1.100		Nov. 30	-0.807	2.600	
Dec. 15	-0.776	-1.900		Dec. 15	-0.660	1.600		Dec. 15	-0.785	1.300		Dec. 15	-0.769	2.800	
Dec. 31	-0.719	-1.800		Dec. 30	-0.670	1.700		Dec. 31	-0.776	1.100		Dec. 31	-0.696	4.200	
Jan. 15	-0.683	-1.500		Jan. 15	-0.630	2.500		Jan. 15	-0.758	1.500		Jan. 15	-0.739	3.500	
Jan. 31	-0.652	-1.800		Jan. 31	-0.709	1.500		Jan. 31	-0.723	1.500		Jan. 31	-0.739	3.200	
Feb. 15	-0.666	-2.200		Feb. 15	-0.729	1.500		Feb. 15	-0.712	0.600		Feb. 15	-0.747	3.200	
Feb. 28	-0.644	-3.000		Feb. 28	-0.697	2.000		Feb. 28	-0.688	0.000		Feb. 28	-0.712	2.800	
Mar. 15	-0.604	-2.700		Mar. 15	-0.669	1.200		Mar. 15	-0.671	0.000		Mar. 15	-0.724	4.000	
Mar. 31	-0.600	-1.300		Mar. 31	-0.711	1.300		Mar. 31	-0.697	0.500		Mar. 31	-0.751	4.800	
Apr. 15	-0.589	-2.800		Apr. 15	-0.712	1.400		Apr. 15	-0.696	0.600		Apr. 15	-0.753	5.100	
Apr. 30	-0.514	-2.500		Apr. 30	-0.666	1.500		Apr. 30	-0.673	1.600		Apr. 30	-0.736	4.800	
May 15	-0.452	-2.500		May 15	-0.626	1.500		May 15	-0.671	2.900		May 15	-0.727	6.000	
May 31	-0.371	-1.700		May 31	-0.508	2.300		May 31	-0.613	2.200		May 31	-0.547	6.000	
June 15	-0.105	-1.800		June 15	-0.277	2.900		June 15	-0.472	3.000		June 15	-0.386	4.300	
June 30	0.336	-1.300		June 30	-0.061	3.000		June 30	-0.202	3.200		June 30	-0.038	4.700	
July 15	3.381	-1.000		July 15	1.249	6.300		July 15	1.353	2.000		July 15	1.465	3.200	
1966				1967				1968							
Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.					
Oct. 15	-1.047	2.300		Oct. 15	-0.996	4.600		Oct. 15	-0.821	0.400					
Oct. 31	-1.040	2.800		Oct. 31	-0.909	6.300		Oct. 31	-0.731	-0.300					
Nov. 15	-0.945	3.100		Nov. 15	-0.910	5.800		Nov. 15	-0.736	-1.100					
Nov. 30	-0.895	4.300		Nov. 30	-0.909	5.200		Nov. 30	-0.697	-0.700					
Dec. 15	-0.872	4.100		Dec. 15	-0.866	5.700		Dec. 15	-0.736	-1.300					
Dec. 31	-0.851	3.900		Dec. 31	-0.863	5.500		Dec. 31	-0.731	-1.300					
Jan. 15	-0.835	4.000		Jan. 15	-0.866	5.300		Jan. 15	-0.728	-1.400					
Jan. 31	-0.802	3.800		Jan. 31	-0.840	4.500		Jan. 31	-0.715	-1.500					
Feb. 15	-0.792	3.600		Feb. 15	-0.826	2.500		Feb. 15	0.142	-1.700					
Feb. 28	-0.756	4.000		Feb. 28	-0.771	1.400		Feb. 28	-0.609	-2.300					
Mar. 15	-0.710	2.700		Mar. 15	-0.759	0.300		Mar. 15	-0.636	-2.000					
Mar. 31	-0.710	1.800		Mar. 31	-0.745	-1.300		Mar. 31	-0.626	-2.200					
Apr. 15	-0.673	2.600		Apr. 15	-0.713	-1.700		Apr. 15	-0.603	-2.100					
Apr. 30	-0.687	3.000		Apr. 30	-0.688	-2.800		Apr. 30	-0.593	-2.000					
May 15	-0.665	3.300		May 15	-0.655	-1.200		May 15	-0.550	-2.000					
May 31	-0.563	1.700		May 31	-0.627	-1.200		May 31	-0.483	-2.500					
June 15	-0.335	0.600		June 15	-0.503	-0.500		June 15	-0.293	-2.200					
June 30	1.136	-3.000		June 30	0.051	-0.800		June 30	0.540	-2.000					
July 15	7.362	-1.200		July 15	1.858	1.800		July 15	3.881	-0.900					





Table 19

JULY OVER DECEMBER CHICAGO CORN, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Jan. 15	-1.082	4.800	Feb. 15	-0.954	4.000	Jan. 15	-1.118	10.000	Jan. 15	-0.956	2.600
Jan. 31	-1.003	3.300	Feb. 28	-0.936	5.300	Jan. 31	-0.983	9.200	Jan. 31	-0.798	0.900
Feb. 15	-0.975	3.700	Mar. 15	-0.912	6.400	Feb. 15	-1.012	8.900	Feb. 15	-0.644	0.100
Feb. 28	-0.910	3.000	Mar. 31	-0.866	8.000	Feb. 28	-0.912	8.800	Feb. 28	-0.574	2.900
Mar. 15	-0.859	2.600	Apr. 15	-0.779	9.500	Mar. 15	-0.912	9.400	Mar. 15	-0.675	3.400
Mar. 31	-0.825	3.800	Apr. 30	-0.821	9.300	Mar. 31	-0.944	10.900	Mar. 31	-0.482	-2.200
Apr. 15	-0.868	7.300	May 15	-0.786	10.500	Apr. 15	-0.961	11.300	Apr. 15	-0.439	-4.300
Apr. 30	-0.880	5.500	May 31	-0.767	10.600	Apr. 30	-0.950	10.400	Apr. 30	-0.392	-4.000
May 15	-0.877	7.000	June 15	-0.613	12.000	May 15	-0.929	8.600	May 15	-0.268	-5.700
May 31	-0.669	7.000	June 30	-0.264	10.700	May 31	-0.889	8.000	May 31	-0.015	-5.300
June 15	-0.621	11.500	July 15	1.198	10.100	June 15	-0.772	6.100	June 15	0.262	-5.500
June 30	-0.145	12.700				June 30	-0.250	3.000	June 30	1.368	-7.000
July 15	0.861	10.400				July 15	1.608	5.000	July 15	23.798	-6.400

1962			1963			1964			1965		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Jan. 15	-1.032	0.500	Jan. 15	-0.862	5.300	Jan. 15	-1.063	5.100	Jan. 15	-1.057	9.500
Jan. 31	-0.929	-1.500	Jan. 31	-0.711	3.900	Jan. 31	-1.031	5.300	Jan. 31	-0.998	10.700
Feb. 15	-0.885	-2.400	Feb. 15	-0.633	4.300	Feb. 15	-0.927	3.900	Feb. 15	-0.969	10.700
Feb. 28	-0.864	-3.200	Feb. 28	-0.611	4.800	Feb. 28	-0.827	2.800	Feb. 28	-0.968	10.800
Mar. 15	-0.817	-3.900	Mar. 15	-0.563	4.200	Mar. 15	-0.773	2.800	Mar. 15	-0.885	11.900
Mar. 31	-0.804	-0.800	Mar. 31	-0.549	4.400	Mar. 31	-0.645	2.800	Mar. 31	-0.837	12.600
Apr. 15	-0.790	-2.600	Apr. 15	-0.526	4.600	Apr. 15	-0.619	4.300	Apr. 15	-0.812	13.000
Apr. 30	-0.789	-2.700	Apr. 30	-0.513	4.700	Apr. 30	-0.622	6.300	Apr. 30	-0.787	12.300
May 15	-0.761	-3.800	May 15	-0.515	6.000	May 15	-0.507	5.800	May 15	-0.674	15.100
May 31	-0.718	-1.600	May 31	-0.402	7.600	May 31	-0.408	5.400	May 31	-0.397	13.600
June 15	-0.634	-1.500	June 15	0.019	9.400	June 15	-0.159	5.500	June 15	-0.115	12.300
June 30	-0.390	-0.800	June 30	0.518	9.500	June 30	0.266	6.200	June 30	0.327	11.200
July 15	1.314	-1.700	July 15	3.151	13.000	July 15	2.018	5.000	July 15	1.938	9.600

1966			1967			1968		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Jan. 15	-1.043	7.800	Jan. 15	-1.128	12.600	Jan. 15	-1.042	0.000
Jan. 31	-1.036	10.000	Jan. 31	-1.048	11.300	Jan. 31	-0.961	-1.100
Feb. 15	-0.994	9.500	Feb. 15	-1.000	9.500	Feb. 15	-0.477	-2.500
Feb. 28	-0.960	8.000	Feb. 28	-0.967	9.200	Feb. 28	-0.822	-2.600
Mar. 15	-0.937	8.000	Mar. 15	-0.871	7.400	Mar. 15	-0.822	-2.200
Mar. 31	-0.852	6.300	Mar. 31	-0.782	3.200	Mar. 31	-0.786	-3.000
Apr. 15	-0.793	6.700	Apr. 15	-0.751	1.000	Apr. 15	-0.735	-3.300
Apr. 30	-0.789	6.500	Apr. 30	-0.644	-2.700	Apr. 30	-0.712	-3.000
May 15	-0.593	6.000	May 15	-0.548	-1.000	May 15	-0.631	-2.600
May 31	-0.328	3.600	May 31	-0.474	0.000	May 31	-0.506	-4.000
June 15	0.002	2.100	June 15	-0.318	1.700	June 15	-0.219	-3.900
June 30	1.900	-5.000	June 30	0.054	0.700	June 30	0.475	-3.300
July 15	12.689	-3.000	July 15	1.858	3.500	July 15	4.483	-1.500



Table 20  
SEPTEMBER OVER DECEMBER CHICAGO CORN, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Jan. 15	-0.867	4.600	Feb. 15	-0.665	2.700	Jan. 15	-0.783	6.600	Jan. 15	-0.149	2.900
Jan. 31	-0.461	3.800	Feb. 28	-0.588	3.200	Jan. 31	-0.132	6.000	Jan. 31	0.382	1.900
Feb. 15	-0.310	3.400	Mar. 15	-0.527	4.000	Feb. 15	-0.390	6.400	Feb. 15	0.804	1.700
Feb. 28	-0.131	2.900	Mar. 31	-0.382	5.000	Feb. 28	0.110	6.500	Feb. 28	1.051	3.200
Mar. 15	-0.065	3.600	Apr. 15	-0.048	6.500	Mar. 15	0.076	6.800	Mar. 15	1.018	3.000
Mar. 31	0.041	3.800	Apr. 30	0.108	5.500	Mar. 31	-0.070	7.500	Mar. 31	1.719	-0.200
Apr. 15	-0.121	6.400	May 15	0.329	7.300	Apr. 15	-0.051	6.900	Apr. 15	2.055	-2.500
Apr. 30	-0.131	4.300	May 31	0.441	6.800	Apr. 30	0.204	7.000	Apr. 30	2.456	-1.900
May 15	-0.111	4.200	June 15	0.705	7.300	May 15	0.109	6.800	May 15	3.050	-3.000
May 31	0.237	3.000	June 30	0.811	5.500	May 31	0.056	7.000	May 31	3.588	-2.600
June 15	0.163	5.500	July 15	0.934	4.900	June 15	0.148	5.300	June 15	3.069	-2.100
June 30	0.182	7.800	July 31	1.010	6.000	June 30	-0.041	4.000	June 30	2.216	-3.400
July 15	0.064	5.800	Aug. 15	1.127	7.700	July 15	0.220	4.200	July 15	1.680	-3.500
July 31	0.084	6.500	Aug. 31	2.251	5.700	July 31	0.288	4.000	July 31	1.689	-3.500
Aug. 15	0.451	10.000	Sept. 15	3.947	3.500	Aug. 15	1.235	5.000	Aug. 15	1.954	-3.900
Aug. 31	1.061	7.000				Aug. 31	2.463	3.300	Aug. 31	4.077	-4.300
Sept. 15	2.333	7.600				Sept. 15	4.945	4.000	Sept. 15	54.611	-4.800

1962			1963			1964			1965		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Jan. 15	-0.754	2.000	Jan. 15	0.119	2.800	Jan. 15	-0.675	3.600	Jan. 15	-0.474	6.000
Jan. 31	-0.345	0.300	Jan. 31	1.177	2.400	Jan. 31	-0.517	3.800	Jan. 31	-0.072	7.500
Feb. 15	-0.116	-0.200	Feb. 15	1.789	2.800	Feb. 15	-0.001	3.300	Feb. 15	0.123	7.500
Feb. 28	-0.084	-0.200	Feb. 28	1.632	2.800	Feb. 28	0.426	2.800	Feb. 28	0.017	8.000
Mar. 15	0.009	-1.200	Mar. 15	1.694	3.000	Mar. 15	0.633	2.800	Mar. 15	0.529	7.900
Mar. 31	0.135	0.500	Mar. 31	2.121	3.100	Mar. 31	1.441	2.300	Mar. 31	0.951	7.800
Apr. 15	0.133	0.200	Apr. 15	2.256	3.200	Apr. 15	1.638	3.700	Apr. 15	1.118	7.900
Apr. 30	-0.045	-0.200	Apr. 30	1.917	3.200	Apr. 30	1.484	4.700	Apr. 30	1.120	7.500
May 15	-0.086	-1.300	May 15	1.672	4.500	May 15	1.941	2.900	May 15	1.735	9.100
May 31	-0.045	0.100	May 31	1.478	5.300	May 31	1.989	3.200	May 31	1.708	7.600
June 15	-0.160	0.300	June 15	1.743	6.500	June 15	2.023	2.500	June 15	1.839	8.000
June 30	-0.110	0.500	June 30	2.065	6.500	June 30	1.984	3.000	June 30	1.630	6.500
July 15	-0.032	-0.700	July 15	2.393	6.700	July 15	1.381	3.000	July 15	1.206	6.400
July 31	0.146	-0.600	July 31	1.536	7.800	July 31	1.014	3.400	July 31	1.726	5.000
Aug. 15	0.790	0.500	Aug. 15	1.520	10.300	Aug. 15	2.151	1.800	Aug. 15	2.522	2.700
Aug. 31	1.728	-1.000	Aug. 31	1.647	12.500	Aug. 31	3.454	2.500	Aug. 31	3.597	5.400
Sept. 15	4.801	0.500	Sept. 15	3.144	14.700	Sept. 15	7.710	2.700	Sept. 15	6.535	5.500

1966			1967			1968		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Jan. 15	-0.260	3.800	Jan. 15	-0.679	7.300	Jan. 15	-0.841	1.400
Jan. 31	-0.161	6.200	Jan. 31	-0.139	6.800	Jan. 31	-0.410	0.400
Feb. 15	0.067	5.900	Feb. 15	0.154	7.000	Feb. 15	-0.109	-0.800
Feb. 28	0.075	4.000	Feb. 28	0.110	7.800	Feb. 28	0.020	-0.300
Mar. 15	0.077	5.300	Mar. 15	0.651	7.100	Mar. 15	0.104	-0.200
Mar. 31	0.483	4.500	Mar. 31	1.030	4.500	Mar. 31	0.226	-0.800
Apr. 15	0.606	4.100	Apr. 15	0.929	2.700	Apr. 15	0.385	-1.200
Apr. 30	0.673	3.500	Apr. 30	1.306	0.100	Apr. 30	0.459	-1.000
May 15	1.473	2.700	May 15	1.574	0.200	May 15	0.659	-0.600
May 31	1.950	1.900	May 31	1.774	1.200	May 31	0.859	-1.500
June 15	1.866	1.500	June 15	1.683	2.200	June 15	1.107	-1.700
June 30	1.542	-2.000	June 30	0.918	1.500	June 30	0.800	-1.300
July 15	2.056	-1.800	July 15	0.856	1.700	July 15	1.080	-0.600
July 31	3.040	-3.000	July 31	1.063	3.000	July 31	1.276	0.100
Aug. 15	3.528	-1.300	Aug. 15	1.740	1.100	Aug. 15	1.934	1.500
Aug. 31	5.743	-1.800	Aug. 31	1.721	3.100	Aug. 31	2.285	1.100
Sept. 15	46.942	-2.200	Sept. 15	3.941	2.100	Sept. 15	3.850	2.100



Table 21

JANUARY OVER MARCH CHICAGO SOYBEANS, 1958 - 1968

1958				1959				1960				1961			
Date	DI	Spread	c/bu.	Date	DI	Spread	c/bu.	Date	DI	Spread	c/bu.	Date	DI	Spread	c/bu.
May 31	-0.877	-2.900		May 31	-0.659	-3.400		May 31	-0.915	-3.100		May 31	-0.680	-2.700	
June 15	-0.789	-3.000		June 15	-0.627	-3.700		June 15	-0.818	-3.200		June 15	-0.248	-2.900	
June 30	-0.577	-3.000		June 30	-0.458	-3.500		June 30	-0.717	-3.000		June 30	-0.110	-3.000	
July 15	-0.329	-3.000		July 15	-0.420	-3.000		July 15	-0.482	-3.000		July 15	-0.134	-2.900	
July 31	-0.101	-2.800		July 31	-0.219	-3.200		July 31	-0.170	-3.000		July 31	-0.026	-3.500	
Aug. 15	0.147	-2.700		Aug. 15	-0.167	-3.200		Aug. 15	-0.091	-3.000		Aug. 15	-0.120	-3.100	
Aug. 31	0.177	-3.400		Aug. 31	-0.120	-3.000		Aug. 31	-0.005	-3.000		Aug. 31	-0.039	-3.500	
Sept. 15	0.072	-3.600		Sept. 15	-0.082	-2.900		Sept. 15	0.009	-3.400		Sept. 15	-0.034	-3.500	
Sept. 30	0.139	-3.200		Sept. 30	-0.240	-3.200		Sept. 30	0.051	-3.500		Sept. 30	-0.007	-3.700	
Oct. 15	0.066	-4.100		Oct. 15	-0.289	-3.100		Oct. 15	0.167	-3.500		Oct. 15	-0.022	-3.700	
Oct. 31	-0.095	-4.000		Oct. 31	-0.299	-4.000		Oct. 31	0.219	-3.800		Oct. 31	0.046	-4.200	
Nov. 15	-0.119	-4.000		Nov. 15	-0.286	-4.300		Nov. 15	0.283	-3.000		Nov. 15	0.188	-4.300	
Nov. 30	-0.093	-4.300		Nov. 30	-0.203	-3.900		Nov. 30	0.413	-4.100		Nov. 30	0.310	-4.300	
Dec. 15	0.076	-4.500		Dec. 15	0.010	-3.500		Dec. 15	0.933	-4.200		Dec. 15	0.525	-4.200	
Dec. 31	0.922	-4.700		Dec. 31	0.410	-2.800		Dec. 31	1.484	-3.500		Dec. 31	1.403	-3.700	
Jan. 15	16.219	-3.500		Jan. 15	6.401	-2.700		Jan. 15	7.169	-3.000		Jan. 15	6.434	-3.400	

1962				1963				1964				1965			
Date	DI	Spread	c/bu.	Date	DI	Spread	c/bu.	Date	DI	Spread	c/bu.	Date	DI	Spread	c/bu.
Apr. 15	-0.478	-3.400		Apr. 15	-0.980	-3.000		Apr. 15	-0.701	-3.000		Apr. 15	-0.784	-2.800	
Apr. 30	-0.510	-3.400		Apr. 30	-0.680	-3.100		Apr. 30	-0.490	-2.900		Apr. 30	-0.626	-3.000	
May 15	-0.462	-3.200		May 15	-0.594	-3.300		May 15	-0.433	-2.700		May 15	-0.449	-3.000	
May 31	-0.404	-3.800		May 31	-0.605	-3.100		May 31	-0.436	-2.600		May 31	-0.390	-3.200	
June 15	-0.312	-4.100		June 15	-0.537	-2.900		June 15	-0.439	-3.500		June 15	-0.322	-3.300	
June 30	-0.285	-4.200		June 30	-0.348	-3.000		June 30	-0.403	-2.400		June 30	-0.270	-3.100	
July 15	-0.249	-4.000		July 15	-0.286	-3.000		July 15	-0.266	-2.500		July 15	-0.211	-3.000	
July 31	-0.199	-4.000		July 31	-0.149	-3.100		July 31	-0.185	-2.800		July 31	-0.197	-3.100	
Aug. 15	-0.179	-3.900		Aug. 15	-0.097	-3.300		Aug. 15	-0.170	-2.700		Aug. 15	-0.209	-3.200	
Aug. 31	-0.169	-3.700		Aug. 31	-0.147	-3.300		Aug. 31	-0.084	-3.000		Aug. 31	-0.097	-3.000	
Sept. 15	-0.127	-3.800		Sept. 15	-0.120	-3.300		Sept. 15	0.013	-3.200		Sept. 15	-0.035	-2.900	
Sept. 30	-0.120	-4.000		Sept. 30	-0.155	-2.600		Sept. 30	0.018	-3.400		Sept. 30	-0.127	-2.300	
Oct. 15	-0.072	-4.000		Oct. 15	-0.299	-3.200		Oct. 15	0.076	-3.100		Oct. 15	-0.140	-3.000	
Oct. 31	-0.149	-2.500		Oct. 31	-0.317	-3.000		Oct. 31	0.068	-5.300		Oct. 31	-0.089	-2.800	
Nov. 15	-0.064	-2.000		Nov. 15	-0.317	-3.000		Nov. 15	0.178	-3.500		Nov. 15	0.049	-2.700	
Nov. 30	0.051	-2.000		Nov. 30	-0.189	-2.700		Nov. 30	0.325	-3.500		Nov. 30	0.474	-3.000	
Dec. 15	0.206	-2.800		Dec. 15	0.061	-2.500		Dec. 15	0.468	-3.500		Dec. 15	0.855	-2.700	
Dec. 31	0.504	-2.700		Dec. 31	0.514	-2.700		Dec. 31	0.938	-4.200		Dec. 31	1.501	-3.400	
Jan. 15	3.435	-2.700		Jan. 15	3.949	-1.000		Jan. 15	6.477	-3.500		Jan. 15	11.765	-2.700	

1966				1967				1968			
Date	DI	Spread	c/bu.	Date	DI	Spread	c/bu.	Date	DI	Spread	c/bu.
Apr. 15	-0.779	-3.000		Apr. 15	-0.499	-3.200		Apr. 15	-0.382	-3.000	
Apr. 30	-0.649	-3.200		Apr. 30	-0.182	-3.200		Apr. 30	-0.257	-3.500	
May 15	-0.591	-3.200		May 15	-0.264	-3.200		May 15	-0.279	-3.300	
May 31	-0.469	-3.500		May 31	-0.255	-3.500		May 31	-0.121	-3.300	
June 15	-0.404	-3.000		June 15	-0.219	-2.800		June 15	-0.018	-3.100	
June 30	-0.206	-3.500		June 30	-0.184	-3.500		June 30	0.080	-3.100	
July 15	-0.272	-3.500		July 15	-0.073	-2.600		July 15	-0.055	-3.300	
July 31	-0.222	-3.400		July 31	-0.057	-3.000		July 31	-0.069	-3.100	
Aug. 15	-0.164	-3.800		Aug. 15	0.200	-3.700		Aug. 15	-0.118	-3.300	
Aug. 31	-0.279	-3.500		Aug. 31	0.113	-4.200		Aug. 31	-0.195	-3.300	
Sept. 15	-0.301	-3.600		Sept. 15	0.159	-5.300		Sept. 15	-0.138	-3.100	
Sept. 30	-0.315	-3.700		Sept. 30	0.096	-5.300		Sept. 30	-0.149	-3.500	
Oct. 15	-0.283	-4.000		Oct. 15	0.073	-4.000		Oct. 15	-0.113	-3.700	
Oct. 31	-0.230	-3.700		Oct. 31	-0.004	-3.100		Oct. 31	-0.142	-4.200	
Nov. 15	-0.232	-3.300		Nov. 15	-0.095	-1.200		Nov. 15	-0.124	-4.000	
Nov. 30	-0.140	-2.500		Nov. 30	-0.147	3.900		Nov. 30	-0.046	-4.300	
Dec. 15	0.358	-2.800		Dec. 15	0.089	3.300		Dec. 15	0.105	-4.800	
Dec. 31	0.558	-3.100		Dec. 31	0.523	4.400		Dec. 31	0.289	-4.800	
Jan. 15	2.340	-1.600		Jan. 15	1.344	4.000		Jan. 15	20.262	-4.000	



Table 22

JANUARY OVER MAY CHICAGO SOYBEANS, 1958 - 1968

1958				1959				1960				1961			
Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.
July 31	-0.848	-4.400		July 31	-0.795	-5.700		July 31	-0.792	-4.500		July 31	-0.543	-6.000	
Aug. 15	-0.638	-4.600		Aug. 15	-0.703	-5.300		Aug. 15	-0.759	-4.800		Aug. 15	-0.366	-5.000	
Aug. 31	-0.528	-5.300		Aug. 31	-0.583	-4.600		Aug. 31	-0.708	-5.000		Aug. 31	-0.362	-5.500	
Sept. 15	-0.429	-5.600		Sept. 15	-0.394	-5.000		Sept. 15	-0.586	-6.100		Sept. 15	-0.222	-5.700	
Sept. 30	-0.201	-5.200		Sept. 30	-0.412	-5.000		Sept. 30	-0.293	-5.200		Sept. 30	-0.159	-6.000	
Oct. 15	-0.117	-6.100		Oct. 15	-0.521	-5.300		Oct. 15	-0.153	-5.500		Oct. 15	0.027	-6.000	
Oct. 31	-0.235	-6.500		Oct. 31	-0.580	-7.000		Oct. 31	0.076	-6.000		Oct. 31	0.347	-7.400	
Nov. 15	-0.229	-6.700		Nov. 15	-0.572	-7.300		Nov. 15	0.280	-4.700		Nov. 15	0.487	-7.500	
Nov. 30	-0.188	-7.300		Nov. 30	-0.558	-7.700		Nov. 30	0.480	-7.000		Nov. 30	0.546	-7.600	
Dec. 15	-0.056	-7.200		Dec. 15	-0.407	-6.000		Dec. 15	1.008	-7.500		Dec. 15	0.792	-7.000	
Dec. 31	0.304	-8.000		Dec. 31	-0.128	-5.000		Dec. 31	1.739	-6.000		Dec. 31	2.080	-6.500	
Jan. 15	11.561	-7.000		Jan. 15	4.008	-3.500		Jan. 15	8.762	-4.500		Jan. 15	10.607	-6.300	

1962				1963				1964				1965			
Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.
June 15	-0.870	-6.700		June 15	-0.921	-5.000		June 15	-0.771	-6.000		June 15	-0.877	-5.900	
June 30	-0.783	-6.900		June 30	-0.854	-5.000		June 30	-0.690	-4.900		June 30	-0.754	-5.900	
July 15	-0.699	-6.800		July 15	-0.820	-5.100		July 15	-0.628	-4.300		July 15	-0.726	-5.500	
July 31	-0.613	-6.700		July 31	-0.561	-5.600		July 31	-0.579	-5.000		July 31	-0.694	-5.500	
Aug. 15	-0.566	-6.900		Aug. 15	-0.459	-5.500		Aug. 15	-0.581	-5.000		Aug. 15	-0.943	-5.200	
Aug. 31	-0.494	-6.600		Aug. 31	-0.353	-5.300		Aug. 31	-0.447	-5.500		Aug. 31	-0.402	-5.500	
Sept. 15	-0.522	-6.800		Sept. 15	-0.052	-6.000		Sept. 15	-0.199	-5.700		Sept. 15	-0.250	-4.800	
Sept. 30	-0.427	-7.200		Sept. 30	-0.131	-4.700		Sept. 30	0.181	-5.500		Sept. 30	-0.163	-4.300	
Oct. 15	-0.228	-7.400		Oct. 15	-0.144	-5.400		Oct. 15	0.569	-5.800		Oct. 15	0.009	-5.000	
Oct. 31	-0.247	-5.400		Oct. 31	-0.290	-5.000		Oct. 31	0.782	-8.800		Oct. 31	0.185	-4.500	
Nov. 15	-0.166	-4.200		Nov. 15	-0.231	-5.400		Nov. 15	1.022	-7.300		Nov. 15	0.468	-3.700	
Nov. 30	-0.130	-3.800		Nov. 30	-0.189	-5.000		Nov. 30	1.115	-7.100		Nov. 30	1.069	-3.800	
Dec. 15	0.061	-4.500		Dec. 15	0.021	-5.000		Dec. 15	1.473	-6.400		Dec. 15	2.057	-3.700	
Dec. 31	0.279	-4.600		Dec. 31	0.361	-4.700		Dec. 31	1.969	-6.900		Dec. 31	2.764	-4.500	
Jan. 15	3.540	-5.500		Jan. 15	3.530	-2.800		Jan. 15	12.122	-6.900		Jan. 15	20.405	-4.500	

1966				1967				1968			
Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.
June 15	-0.788	-5.400		June 15	-0.766	-5.400		June 15	-0.828	-5.600	
June 30	-0.597	-5.700		June 30	-0.510	-4.500		June 30	-0.656	-5.400	
July 15	-0.589	-6.000		July 15	-0.452	-4.700		July 15	-0.524	-5.800	
July 31	-0.457	-5.900		July 31	-0.370	-5.000		July 31	-0.419	-5.800	
Aug. 15	-0.356	-6.300		Aug. 15	-0.153	-5.600		Aug. 15	-0.359	-5.900	
Aug. 31	-0.496	-6.000		Aug. 31	-0.060	-7.000		Aug. 31	-0.363	-5.300	
Sept. 15	-0.433	-6.300		Sept. 15	-0.041	-8.400		Sept. 15	-0.293	-5.600	
Sept. 30	-0.432	-6.500		Sept. 30	-0.017	-8.900		Sept. 30	-0.038	-5.500	
Oct. 15	-0.369	-6.500		Oct. 15	0.066	-6.000		Oct. 15	0.035	-6.600	
Oct. 31	-0.262	-6.200		Oct. 31	-0.071	-5.800		Oct. 31	0.084	-6.800	
Nov. 15	-0.315	-5.300		Nov. 15	-0.138	-4.000		Nov. 15	0.000	-7.100	
Nov. 30	-0.178	-4.700		Nov. 30	-0.124	3.500		Nov. 30	0.141	-8.300	
Dec. 15	0.442	-5.200		Dec. 15	0.131	3.300		Dec. 15	0.318	-8.900	
Dec. 31	0.623	-5.400		Dec. 31	0.475	5.600		Dec. 31	0.438	-8.800	
Jan. 15	3.329	-2.500		Jan. 15	1.303	5.700		Jan. 15	23.959	-8.000	





Table 23

JANUARY OVER JULY CHICAGO SOYBEANS, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Sept. 30	-0.892	-3.200	Sept. 30	-0.944	-5.200	Sept. 30	-0.916	-5.500	Sept. 30	-0.971	-7.300
Oct. 15	-0.763	-4.600	Oct. 15	-0.862	-5.900	Oct. 15	-0.730	-5.800	Oct. 15	-0.913	-7.000
Oct. 31	-0.738	-4.500	Oct. 31	-0.868	-7.500	Oct. 31	-0.564	-6.700	Oct. 31	-0.810	-8.500
Nov. 15	-0.752	-5.000	Nov. 15	-0.844	-7.800	Nov. 15	-0.454	-5.000	Nov. 15	-0.537	-9.500
Nov. 30	-0.716	-5.900	Nov. 30	-0.806	-8.300	Nov. 30	-0.281	-7.500	Nov. 30	-0.381	-9.600
Dec. 15	-0.555	-6.500	Dec. 15	-0.783	-5.500	Dec. 15	0.081	-8.700	Dec. 15	-0.093	-8.500
Dec. 31	-0.284	-7.600	Dec. 31	-0.619	-4.600	Dec. 31	0.726	-6.700	Dec. 31	1.121	-7.500
Jan. 15	6.229	-6.800	Jan. 15	1.042	-2.700	Jan. 15	5.518	-4.700	Jan. 15	8.107	-7.100

1962			1963			1964			1965		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Aug. 15	-0.961	-0.900	Aug. 31	-0.977	-6.300	Aug. 15	-0.933	-6.200	Aug. 15	-0.917	-6.200
Aug. 31	-0.868	-8.700	Sept. 15	-0.810	-6.700	Aug. 31	-0.897	-6.500	Aug. 31	-0.807	-6.500
Sept. 15	-0.846	-9.000	Sept. 30	-0.684	-6.000	Sept. 15	-0.829	-6.900	Sept. 15	-0.731	-5.100
Sept. 30	-0.807	-9.600	Oct. 15	-0.630	-6.200	Sept. 30	-0.660	-7.000	Sept. 30	-0.724	-4.600
Oct. 15	-0.710	-9.700	Oct. 31	-0.653	-5.000	Oct. 15	-0.514	-7.000	Oct. 15	-0.648	-4.600
Oct. 31	-0.709	-7.200	Nov. 15	-0.575	-5.700	Oct. 31	-0.411	-10.700	Oct. 31	-0.612	-4.300
Nov. 15	-0.662	-4.800	Nov. 30	-0.536	-5.500	Nov. 15	-0.177	-9.100	Nov. 15	-0.470	-3.000
Nov. 30	-0.611	-3.800	Dec. 15	-0.363	-6.200	Nov. 30	-0.018	-8.300	Nov. 30	0.004	-3.000
Dec. 15	-0.490	-4.300	Dec. 31	-0.172	-5.700	Dec. 15	0.256	-7.900	Dec. 15	0.613	-2.200
Dec. 31	-0.356	-4.500	Jan. 15	2.036	-3.800	Dec. 31	0.664	-9.000	Dec. 31	1.219	-2.500
Jan. 15	1.660	-5.000				Jan. 15	6.763	-8.500	Jan. 15	12.756	-3.000

1966			1967			1968		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Aug. 15	-0.950	-7.500	Aug. 15	-0.946	-7.600	Aug. 15	-0.940	-7.500
Aug. 31	-0.910	-7.000	Aug. 31	-0.831	-8.400	Aug. 31	-0.888	-6.200
Sept. 15	-0.870	-7.300	Sept. 15	-0.700	-10.900	Sept. 15	-0.819	-6.400
Sept. 30	-0.846	-7.200	Sept. 30	-0.662	-10.700	Sept. 30	-0.692	-6.700
Oct. 15	-0.754	-7.500	Oct. 15	-0.599	-6.900	Oct. 15	-0.543	-7.500
Oct. 31	-0.666	-7.000	Oct. 31	-0.557	-7.300	Oct. 31	-0.479	-8.500
Nov. 15	-0.640	-5.500	Nov. 15	-0.503	-4.700	Nov. 15	-0.446	-8.700
Nov. 30	-0.578	-4.800	Nov. 30	-0.392	2.600	Nov. 30	-0.341	-10.900
Dec. 15	-0.178	-6.300	Dec. 15	-0.058	3.300	Dec. 15	-0.145	-11.000
Dec. 31	0.066	-6.100	Dec. 31	0.125	6.600	Dec. 31	-0.039	-10.800
Jan. 15	1.770	-2.500	Jan. 15	0.979	7.500	Jan. 15	16.474	-9.500



Table 24

MARCH OVER JULY CHICAGO SOYBEANS, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread c/bu.	Date	DI	Spread c/bu.	Date	DI	Spread c/bu.	Date	DI	Spread c/bu.
Sept. 30	-0.897	0.000	Sept. 30	-0.906	-2.000	Sept. 30	-0.909	-2.000	Sept. 30	-0.960	-3.600
Oct. 15	-0.771	-0.500	Oct. 15	-0.785	-2.800	Oct. 15	-0.761	-2.300	Oct. 15	-0.900	-3.300
Oct. 31	-0.699	-0.500	Oct. 31	-0.797	-3.500	Oct. 31	-0.636	-2.900	Oct. 31	-0.811	-4.300
Nov. 15	-0.706	-1.000	Nov. 15	-0.769	-3.500	Nov. 15	-0.569	-2.000	Nov. 15	-0.604	-5.200
Nov. 30	-0.677	-1.600	Nov. 30	-0.744	-4.400	Nov. 30	-0.487	-3.400	Nov. 30	-0.521	-5.300
Dec. 15	-0.581	-2.000	Dec. 15	-0.775	-2.000	Dec. 15	-0.437	-4.500	Dec. 15	-0.401	-4.300
Dec. 31	-0.628	-2.900	Dec. 31	-0.724	-1.800	Dec. 31	-0.306	-3.200	Dec. 31	-0.116	-3.800
Jan. 15	-0.585	-3.300	Jan. 15	-0.740	0.000	Jan. 15	-0.213	-1.700	Jan. 15	0.223	-3.700
Jan. 31	-0.450	-4.600	Jan. 31	-0.646	-1.500	Jan. 31	0.000	-1.600	Jan. 31	1.215	-5.600
Feb. 15	-0.429	-6.300	Feb. 15	-0.511	-0.800	Feb. 15	0.285	-2.700	Feb. 15	2.114	-7.700
Feb. 28	0.062	-7.000	Feb. 28	-0.077	-3.500	Feb. 28	0.789	-4.300	Feb. 28	3.407	-7.700
Mar. 15	8.473	-5.200	Mar. 15	4.520	-4.300	Mar. 15	5.704	-4.500	Mar. 15	23.115	-6.700

1962			1963			1964			1965		
Date	DI	Spread c/bu.	Date	DI	Spread c/bu.	Date	DI	Spread c/bu.	Date	DI	Spread c/bu.
Aug. 15	-0.943	-5.100	Aug. 31	-0.958	-3.000	Aug. 15	-0.903	-3.500	Aug. 15	-0.880	-3.000
Aug. 31	-0.831	-5.000	Sept. 15	-0.771	-3.400	Aug. 31	-0.875	-3.500	Aug. 31	-0.775	-3.500
Sept. 15	-0.814	-5.200	Sept. 30	-0.612	-3.400	Sept. 15	-0.821	-3.700	Sept. 15	-0.710	-2.200
Sept. 30	-0.772	-5.600	Oct. 15	-0.457	-3.000	Sept. 30	-0.658	-3.600	Sept. 30	-0.670	-2.300
Oct. 15	-0.680	-5.700	Oct. 31	-0.473	-2.000	Oct. 15	-0.541	-3.900	Oct. 15	-0.578	-1.600
Oct. 31	-0.645	-4.700	Nov. 15	-0.361	-2.700	Oct. 31	-0.445	-5.400	Oct. 31	-0.563	-1.500
Nov. 15	-0.625	-2.800	Nov. 30	-0.415	-2.800	Nov. 15	-0.296	-5.600	Nov. 15	-0.487	-0.300
Nov. 30	-0.617	-1.800	Dec. 15	-0.391	-3.700	Nov. 30	-0.254	-4.800	Nov. 30	-0.319	0.000
Dec. 15	-0.570	-1.500	Dec. 31	-0.448	-3.000	Dec. 15	-0.141	-4.400	Dec. 15	-0.135	0.500
Dec. 31	-0.568	-1.800	Jan. 15	-0.389	-2.800	Dec. 31	-0.138	-4.800	Dec. 31	-0.122	0.900
Jan. 15	-0.405	-2.300	Jan. 31	0.256	-4.600	Jan. 15	0.041	-5.000	Jan. 15	0.065	-0.300
Jan. 31	-0.284	-3.800	Feb. 15	0.608	-3.400	Jan. 31	0.364	-3.200	Jan. 31	0.764	-3.800
Feb. 15	-0.123	-4.000	Feb. 28	1.426	-3.200	Feb. 15	0.732	-2.500	Feb. 15	1.534	-4.700
Feb. 28	0.452	-6.800	Mar. 15	5.734	-1.400	Feb. 28	1.137	-2.300	Feb. 28	2.464	-5.300
Mar. 15	6.818	-4.000				Mar. 15	4.076	4.500	Mar. 15	18.779	-4.900

1966			1967			1968		
Date	DI	Spread c/bu.	Date	DI	Spread c/bu.	Date	DI	Spread c/bu.
Aug. 15	-0.930	-3.700	Aug. 15	-0.950	-3.900	Aug. 15	-0.919	-4.200
Aug. 31	-0.861	-3.500	Aug. 31	-0.843	-4.200	Aug. 31	-0.846	-2.900
Sept. 15	-0.800	-3.700	Sept. 15	-0.738	-5.600	Sept. 15	-0.776	-3.300
Sept. 30	-0.761	-3.500	Sept. 30	-0.689	-5.400	Sept. 30	-0.625	-3.200
Oct. 15	-0.644	-3.500	Oct. 15	-0.620	-2.900	Oct. 15	-0.474	-3.800
Oct. 31	-0.555	-3.300	Oct. 31	-0.548	-4.200	Oct. 31	-0.384	-4.300
Nov. 15	-0.517	-2.200	Nov. 15	-0.439	-3.500	Nov. 15	-0.359	-4.700
Nov. 30	-0.496	-2.300	Nov. 30	-0.270	-1.300	Nov. 30	-0.302	-6.600
Dec. 15	-0.390	-3.500	Dec. 15	-0.128	0.000	Dec. 15	-0.219	-6.200
Dec. 31	-0.313	-3.000	Dec. 31	-0.261	2.200	Dec. 31	-0.247	-6.000
Jan. 15	-0.177	-0.900	Jan. 15	-0.167	3.500	Jan. 15	-0.173	-5.500
Jan. 31	0.259	-2.300	Jan. 31	-0.109	5.000	Jan. 31	0.048	-4.900
Feb. 15	0.737	-3.400	Feb. 15	0.256	3.400	Feb. 15	0.307	-5.200
Feb. 28	1.478	-4.400	Feb. 28	0.548	1.700	Feb. 28	0.915	-7.000
Mar. 15	11.902	-4.600	Mar. 15	2.399	-0.500	Mar. 15	32.297	-7.700



Table 25

MAY OVER JULY CHICAGO SOYBEANS, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Sept. 30	-0.854	2.000	Sept. 30	-0.884	-0.200	Sept. 30	-0.869	-0.300	Sept. 30	-0.963	-1.300
Oct. 15	-0.730	1.500	Oct. 15	-0.692	-0.600	Oct. 15	-0.679	-0.300	Oct. 15	-0.916	-1.000
Oct. 31	-0.653	2.000	Oct. 31	-0.672	-0.500	Oct. 31	-0.598	-0.700	Oct. 31	-0.867	-1.100
Nov. 15	-0.675	1.700	Nov. 15	-0.626	-0.500	Nov. 15	-0.577	-0.300	Nov. 15	-0.697	-2.000
Nov. 30	-0.651	1.400	Nov. 30	-0.553	-0.600	Nov. 30	-0.524	-0.500	Nov. 30	-0.608	-2.000
Dec. 15	-0.533	0.700	Dec. 15	-0.622	0.500	Dec. 15	-0.473	-1.200	Dec. 15	-0.503	-1.500
Dec. 31	-0.462	0.400	Dec. 31	-0.560	0.400	Dec. 31	-0.383	-0.700	Dec. 31	-0.323	-1.000
Jan. 15	-0.444	0.200	Jan. 15	-0.611	0.800	Jan. 15	-0.351	-0.200	Jan. 15	-0.230	-0.800
Jan. 31	-0.408	-1.000	Jan. 31	-0.543	0.300	Jan. 31	-0.325	0.200	Jan. 31	-0.039	-2.800
Feb. 15	-0.399	-2.200	Feb. 15	-0.502	0.500	Feb. 15	-0.243	-0.500	Feb. 15	0.056	-3.000
Feb. 28	-0.453	-2.900	Feb. 28	-0.397	-1.000	Feb. 28	-0.252	-1.000	Feb. 28	0.168	-2.900
Mar. 15	-0.446	-1.700	Mar. 15	-0.390	-1.300	Mar. 15	-0.211	-1.900	Mar. 15	0.278	-2.700
Mar. 31	-0.436	-1.500	Mar. 31	-0.210	-1.700	Mar. 31	-0.083	-1.700	Mar. 31	0.332	-1.700
Apr. 15	-0.088	-2.500	Apr. 15	0.100	-1.000	Apr. 15	0.158	-2.000	Apr. 15	0.833	-3.300
Apr. 30	0.741	-3.300	Apr. 30	0.804	-0.300	Apr. 30	0.770	-2.800	Apr. 30	1.576	-3.700
May 15	8.205	-2.400	May 15	3.967	1.300	May 15	4.034	-1.500	May 15	4.351	0.200

1962			1963			1964			1965		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Aug. 15	-0.906	-2.100	Aug. 31	-0.952	-1.000	Aug. 15	-0.816	-1.200	Aug. 15	0.516	-1.000
Aug. 31	-0.736	-2.100	Sept. 15	-0.799	-0.700	Aug. 31	-0.802	-1.000	Aug. 31	-0.669	-1.000
Sept. 15	-0.675	-2.200	Sept. 30	-0.633	-1.300	Sept. 15	-0.783	-1.200	Sept. 15	-0.634	-0.300
Sept. 30	-0.666	-2.400	Oct. 15	-0.567	-0.800	Sept. 30	-0.714	-1.500	Sept. 30	-0.665	-0.300
Oct. 15	-0.630	-2.300	Oct. 31	-0.505	0.000	Oct. 15	-0.695	-1.200	Oct. 15	-0.650	0.400
Oct. 31	-0.612	-1.800	Nov. 15	-0.445	-0.300	Oct. 31	-0.678	-1.900	Oct. 31	-0.674	0.200
Nov. 15	-0.589	-0.600	Nov. 30	-0.426	-0.500	Nov. 15	-0.600	-1.800	Nov. 15	-0.642	0.700
Nov. 30	-0.547	0.000	Dec. 15	-0.379	-1.200	Nov. 30	-0.544	-1.200	Nov. 30	-0.523	0.800
Dec. 15	-0.520	0.200	Dec. 31	-0.396	-1.000	Dec. 15	-0.500	-1.500	Dec. 15	-0.486	1.500
Dec. 31	-0.501	0.100	Jan. 15	-0.340	-1.000	Dec. 31	-0.447	-2.100	Dec. 31	-0.428	2.000
Jan. 15	-0.431	0.500	Jan. 31	-0.351	-1.700	Jan. 15	-0.418	-1.600	Jan. 15	-0.377	1.500
Jan. 31	-0.393	-0.800	Feb. 15	-0.324	-1.200	Jan. 31	-0.343	-1.300	Jan. 31	-0.326	-0.200
Feb. 15	-0.398	-0.800	Feb. 28	-0.305	-0.800	Feb. 15	-0.274	-1.000	Feb. 15	-0.305	-1.000
Feb. 28	-0.373	-2.500	Mar. 15	-0.220	-0.400	Feb. 28	-0.297	-0.800	Feb. 28	-0.334	-1.000
Mar. 15	-0.304	-1.300	Mar. 31	0.082	-1.100	Mar. 15	-0.213	1.300	Mar. 15	-0.213	-1.300
Mar. 31	-0.113	-1.200	Apr. 15	0.196	-1.000	Mar. 31	-0.209	3.800	Mar. 31	-0.148	-0.100
Apr. 15	0.124	1.400	Apr. 30	1.154	-1.500	Apr. 15	-0.017	4.300	Apr. 15	-0.024	-0.200
Apr. 30	0.770	0.500	May 15	5.126	-1.200	Apr. 30	0.453	3.200	Apr. 30	0.837	-2.500
May 15	2.734	2.000				May 15	1.230	0.500	May 15	4.943	-0.800

1966			1967			1968		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Aug. 15	-0.918	-1.200	Aug. 15	-0.934	-2.000	Aug. 15	-0.900	-1.600
Aug. 31	-0.810	-1.000	Aug. 31	-0.823	-1.400	Aug. 31	-0.815	-0.900
Sept. 15	-0.765	-1.000	Sept. 15	-0.693	-2.500	Sept. 15	-0.738	-0.800
Sept. 30	-0.723	-0.700	Sept. 30	-0.664	-1.800	Sept. 30	-0.680	-1.200
Oct. 15	-0.607	-1.000	Oct. 15	-0.626	-0.900	Oct. 15	-0.562	-0.900
Oct. 31	-0.546	-0.800	Oct. 31	-0.525	-1.500	Oct. 31	-0.524	-1.700
Nov. 15	-0.469	-0.200	Nov. 15	-0.421	-0.700	Nov. 15	-0.451	-1.600
Nov. 30	-0.484	-0.100	Nov. 30	-0.297	-0.900	Nov. 30	-0.429	-2.600
Dec. 15	-0.435	-1.100	Dec. 15	-0.168	0.000	Dec. 15	-0.359	-2.100
Dec. 31	-0.350	-0.700	Dec. 31	-0.240	1.000	Dec. 31	-0.339	-2.000
Jan. 15	-0.372	0.000	Jan. 15	-0.152	1.800	Jan. 15	-0.311	-1.500
Jan. 31	-0.339	-0.300	Jan. 31	-0.091	2.000	Jan. 31	-0.236	-1.400
Feb. 15	-0.351	-0.900	Feb. 15	-0.003	2.100	Feb. 15	-0.219	-1.500
Feb. 28	-0.274	-1.000	Feb. 28	-0.066	1.200	Feb. 28	-0.296	-2.500
Mar. 15	-0.242	-0.900	Mar. 15	0.030	-0.800	Mar. 15	-0.188	-3.200
Mar. 31	-0.061	-1.700	Mar. 31	0.204	-0.200	Mar. 31	-0.146	-3.200
Apr. 15	0.565	-2.500	Apr. 15	0.537	0.500	Apr. 15	0.019	-3.100
Apr. 30	2.360	-4.000	Apr. 30	1.472	-0.800	Apr. 30	0.769	-3.000
May 15	9.286	-2.800	May 15	5.036	-0.600	May 15	4.640	-0.400



Table 26

JULY OVER SEPTEMBER CHICAGO SOYBEANS, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Nov. 30	-1.003	9.100	Nov. 30	-0.869	5.600	Nov. 30	-1.001	12.000	Nov. 30	-0.927	9.900
Dec. 15	-0.936	11.000	Dec. 15	-0.817	7.800	Dec. 15	-0.977	10.700	Dec. 15	-0.902	10.400
Dec. 31	-0.879	13.000	Dec. 31	-0.709	7.900	Dec. 31	-0.877	8.100	Dec. 31	-0.921	17.500
Jan. 15	-0.789	14.000	Jan. 15	-0.489	10.600	Jan. 15	-0.868	7.500	Jan. 15	-0.868	18.300
Jan. 31	-0.718	9.000	Jan. 31	-0.551	10.500	Jan. 31	-0.872	7.300	Jan. 31	-0.977	26.600
Feb. 15	-0.615	9.100	Feb. 15	-0.385	13.300	Feb. 15	-0.855	4.500	Feb. 15	-0.962	30.200
Feb. 28	-0.564	5.400	Feb. 28	-0.519	14.200	Feb. 28	-0.848	5.500	Feb. 28	-0.948	40.100
Mar. 15	-0.490	5.700	Mar. 15	-0.524	12.500	Mar. 15	-0.839	8.000	Mar. 15	-0.985	40.200
Mar. 31	-0.456	6.000	Mar. 31	-0.481	9.200	Mar. 31	-0.858	8.500	Mar. 31	-0.997	48.600
Apr. 15	-0.614	8.000	Apr. 15	-0.527	9.700	Apr. 15	-0.849	5.300	Apr. 15	-1.084	66.800
Apr. 30	-0.647	4.300	Apr. 30	-0.590	13.200	Apr. 30	-0.857	5.000	Apr. 30	-1.017	57.300
May 15	-0.640	3.800	May 15	-0.543	11.800	May 15	-0.825	4.100	May 15	-0.988	46.000
May 31	-0.575	2.500	May 31	-0.528	10.300	May 31	-0.811	3.300	May 31	-0.926	37.500
June 15	-0.408	2.800	June 15	-0.405	10.800	June 15	-0.706	0.900	June 15	-0.782	12.300
June 30	-0.063	0.700	June 30	-0.105	10.800	June 30	-0.418	0.500	June 30	-0.601	10.500
July 15	1.628	3.600	July 15	1.959	1.500	July 15	0.285	0.300	July 15	-0.364	6.000

1962			1963			1964			1965		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Oct. 15	-1.001	7.000	Oct. 15	-1.039	12.700	Oct. 31	-1.005	35.900	Oct. 15	-0.892	-13.500
Oct. 31	-0.947	7.800	Oct. 31	-1.023	13.200	Nov. 15	-0.884	29.600	Oct. 31	-0.803	-13.000
Nov. 15	-0.914	10.000	Nov. 15	-1.001	14.500	Nov. 30	-0.880	21.500	Nov. 15	-0.840	-8.300
Nov. 30	-0.737	11.600	Nov. 30	-0.952	13.300	Dec. 15	-0.924	20.600	Nov. 30	-0.926	6.000
Dec. 15	-0.609	10.400	Dec. 15	-0.865	11.300	Dec. 31	-0.943	29.200	Dec. 15	-0.911	1.200
Dec. 31	-0.707	9.400	Dec. 31	-0.880	10.200	Jan. 15	-0.905	21.500	Dec. 31	-0.901	0.900
Jan. 15	-0.651	6.900	Jan. 15	-0.869	13.800	Jan. 31	-0.869	12.400	Jan. 15	-0.956	15.700
Jan. 31	-0.655	6.800	Jan. 31	-0.963	19.800	Feb. 15	-0.895	9.800	Jan. 31	-1.031	30.300
Feb. 15	-0.590	7.500	Feb. 15	-0.931	14.900	Feb. 28	-0.880	9.300	Feb. 15	-1.007	21.300
Feb. 28	-0.602	7.100	Feb. 28	-0.939	12.900	Mar. 15	-0.895	11.700	Feb. 28	-1.020	26.900
Mar. 15	-0.635	8.500	Mar. 15	-0.926	10.500	Mar. 31	-0.857	8.900	Mar. 15	-0.982	15.500
Mar. 31	-0.639	7.200	Mar. 31	-0.932	11.400	Apr. 15	-0.824	10.700	Mar. 31	-1.002	21.500
Apr. 15	-0.667	7.800	Apr. 15	-0.917	9.300	Apr. 30	-0.864	8.400	Apr. 15	-0.986	21.800
Apr. 30	-0.696	7.500	Apr. 30	-0.941	10.000	May 15	-0.809	7.100	Apr. 30	-0.944	10.200
May 15	-0.696	8.000	May 15	-0.929	8.700	May 31	-0.833	5.300	May 15	-0.950	8.000
May 31	-0.691	11.500	May 31	-0.906	6.700	June 15	-0.756	6.600	May 31	-0.894	-2.300
June 15	-0.636	13.000	June 15	-0.828	3.300	June 30	-0.616	4.800	June 15	-0.904	9.600
June 30	-0.499	13.500	June 30	-0.654	1.000	July 15	-0.287	7.700	June 30	-0.938	21.500
July 15	-0.089	16.900	July 15	0.261	1.500				July 15	-0.861	16.000

1966			1967			1968		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Oct. 15	-0.995	10.100	Oct. 15	-0.975	13.400	Oct. 15	-0.942	5.600
Oct. 31	-0.939	11.000	Oct. 31	-0.880	12.000	Oct. 31	-0.847	4.500
Nov. 15	-0.919	12.500	Nov. 15	-0.898	10.700	Nov. 15	-0.842	5.000
Nov. 30	-0.918	10.200	Nov. 30	-0.917	9.200	Nov. 30	-0.806	2.900
Dec. 15	-0.908	9.500	Dec. 15	-0.879	6.300	Dec. 15	-0.770	4.500
Dec. 31	-0.924	7.800	Dec. 31	-0.862	6.800	Dec. 31	-0.810	4.500
Jan. 15	-0.894	15.200	Jan. 15	-0.868	6.500	Jan. 15	-0.789	6.200
Jan. 31	-0.905	15.500	Jan. 31	-0.853	6.300	Jan. 31	-0.821	5.400
Feb. 15	-0.924	19.900	Feb. 15	-0.843	5.600	Feb. 15	-0.831	5.100
Feb. 28	-0.888	13.000	Feb. 28	-0.866	5.400	Feb. 28	-0.842	5.000
Mar. 15	-0.893	12.900	Mar. 15	-0.828	6.000	Mar. 15	-0.874	5.200
Mar. 31	-0.903	13.400	Mar. 31	-0.827	5.000	Mar. 31	-0.875	6.500
Apr. 15	-0.910	11.800	Apr. 15	-0.828	4.900	Apr. 15	-0.859	7.800
Apr. 30	-0.971	19.200	Apr. 30	-0.778	2.200	Apr. 30	-0.884	8.500
May 15	-0.973	20.700	May 15	-0.735	3.700	May 15	-0.880	8.200
May 31	-0.911	24.400	May 31	-0.680	2.500	May 31	-0.869	6.200
June 15	-0.807	26.700	June 15	-0.570	9.200	June 15	-0.826	7.100
June 30	-0.597	41.400	June 30	-0.344	7.700	June 30	-0.622	7.500
July 15	0.844	14.600	July 15	-0.002	13.000	July 15	0.330	8.100





Table 27

AUGUST OVER SEPTEMBER CHICAGO SOYBEANS, 1962 - 1968<sup>1</sup>

1962			1963			1964			1965		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Oct. 15	0.999	7.800	Oct. 15	-0.192	-24.700	Oct. 31	-0.611	31.000	Oct. 15	-0.538	19.700
Oct. 31	1.846	8.600	Oct. 31	0.167	-25.100	Nov. 15	-0.134	24.600	Oct. 31	-0.384	19.500
Nov. 15	1.591	9.400	Nov. 15	0.311	-23.200	Nov. 30	-0.111	18.100	Nov. 15	-0.268	21.700
Nov. 30	1.683	10.700	Nov. 30	0.353	-25.000	Dec. 15	-0.386	16.600	Nov. 30	-0.177	26.700
Dec. 15	1.822	8.400	Dec. 15	0.607	-23.000	Dec. 31	-0.338	23.500	Dec. 15	-0.288	23.700
Dec. 31	1.529	8.600	Dec. 31	0.455	-22.000	Jan. 15	-0.365	17.200	Dec. 31	-0.340	20.900
Jan. 15	1.574	5.900	Jan. 15	0.131	-16.300	Jan. 31	-0.355	9.000	Jan. 15	-0.319	25.200
Jan. 31	1.695	6.500	Jan. 31	-0.396	-1.500	Feb. 15	-0.495	6.500	Jan. 31	-0.499	36.900
Feb. 15	1.632	7.200	Feb. 15	-0.366	-8.600	Feb. 28	-0.500	5.800	Feb. 15	-0.366	31.800
Feb. 28	1.547	6.900	Feb. 28	-0.285	-7.100	Mar. 15	-0.504	6.700	Feb. 28	-0.485	36.400
Mar. 15	1.536	7.500	Mar. 15	-0.405	-14.300	Mar. 31	-0.525	4.700	Mar. 15	-0.538	28.300
Mar. 31	1.550	7.200	Mar. 31	-0.524	-12.100	Apr. 15	-0.443	6.500	Mar. 31	-0.702	31.400
Apr. 15	1.464	6.000	Apr. 15	-0.498	-10.200	Apr. 30	-0.550	5.400	Apr. 15	-0.629	30.100
Apr. 30	1.576	5.800	Apr. 30	-0.659	-6.800	May 15	-0.618	4.600	Apr. 30	-0.708	24.500
May 15	1.808	5.300	May 15	-0.760	-2.800	May 31	-0.624	3.300	May 15	-0.653	25.200
May 31	1.647	8.200	May 31	-0.762	-5.000	June 15	-0.615	3.600	May 31	-0.707	24.900
June 15	1.283	9.000	June 15	-0.830	1.300	June 30	-0.679	3.800	June 15	-0.686	25.200
June 30	1.146	10.000	June 30	-0.818	6.200	July 15	-0.692	5.000	June 30	-0.710	28.200
July 15	0.973	12.700	July 15	-0.757	-1.000	July 31	-0.681	7.700	July 15	-0.734	26.300
July 31	0.946	16.300	July 31	-0.701	4.400	Aug. 15	-0.330	5.100	July 31	-0.528	20.200
Aug. 15	1.035	16.100	Aug. 15	0.303	2.300				Aug. 15	-0.439	22.700

1966			1967			1968		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Oct. 15	-0.611	7.200	Oct. 15	-0.579	9.900	Oct. 15	-0.642	3.600
Oct. 31	-0.120	7.200	Oct. 31	0.203	9.000	Oct. 31	-0.440	2.800
Nov. 15	0.231	8.500	Nov. 15	0.143	6.500	Nov. 15	-0.426	3.800
Nov. 30	0.025	6.200	Nov. 30	-0.234	6.800	Nov. 30	-0.306	2.500
Dec. 15	-0.170	5.400	Dec. 15	-0.287	4.100	Dec. 15	-0.181	3.500
Dec. 31	-0.292	4.300	Dec. 31	-0.422	3.900	Dec. 31	-0.304	4.100
Jan. 15	-0.289	10.300	Jan. 15	-0.472	3.500	Jan. 15	-0.324	5.100
Jan. 31	-0.352	12.000	Jan. 31	-0.567	3.100	Jan. 31	-0.415	4.400
Feb. 15	-0.430	15.900	Feb. 15	-0.605	3.100	Feb. 15	-0.441	4.300
Feb. 28	-0.362	9.600	Feb. 28	-0.668	3.600	Feb. 28	-0.520	4.300
Mar. 15	-0.462	9.900	Mar. 15	-0.587	4.500	Mar. 15	-0.581	4.900
Mar. 31	-0.468	9.900	Mar. 31	-0.576	3.500	Mar. 31	-0.651	6.800
Apr. 15	-0.431	9.300	Apr. 15	-0.539	3.800	Apr. 15	-0.588	7.500
Apr. 30	-0.719	16.500	Apr. 30	-0.471	1.900	Apr. 30	-0.622	7.500
May 15	-0.762	18.000	May 15	-0.472	3.100	May 15	-0.594	6.800
May 31	-0.763	21.000	May 31	-0.539	2.200	May 31	-0.616	5.100
June 15	-0.790	25.500	June 15	-0.578	5.500	June 15	-0.625	6.600
June 30	-0.663	34.900	June 30	-0.590	4.700	June 30	-0.696	7.800
July 15	-0.535	11.000	July 15	-0.672	8.100	July 15	-0.638	7.200
July 31	-0.347	11.000	July 31	-0.524	5.800	July 31	-0.684	10.700
Aug. 15	0.473	26.500	Aug. 15	-0.314	6.200	Aug. 15	-0.216	9.800

1

The August Soybean contract did not exist before 1962, thus analysis for years prior to that was impossible.



Table 28

AUGUST OVER NOVEMBER CHICAGO SOYBEANS, 1962 - 1968\*

1962			1963			1964			1965		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Dec. 15	-0.706	10.800	Dec. 15	-0.712	10.200	Dec. 15	-0.756	21.000	Nov. 30	-0.826	33.500
Dec. 31	-0.690	11.000	Dec. 31	-0.722	9.400	Dec. 31	-0.489	28.900	Dec. 15	-0.696	30.900
Jan. 15	-0.395	7.000	Jan. 15	-0.544	14.000	Jan. 15	-0.360	21.000	Dec. 31	-0.563	26.900
Jan. 31	-0.221	7.500	Jan. 31	-0.359	24.200	Jan. 31	-0.129	11.500	Jan. 15	-0.517	35.400
Feb. 15	-0.300	8.200	Feb. 15	-0.313	16.600	Feb. 15	-0.148	8.500	Jan. 31	-0.483	48.200
Feb. 28	-0.264	7.900	Feb. 28	-0.022	14.900	Feb. 28	-0.150	7.900	Feb. 15	-0.275	40.400
Mar. 15	-0.195	8.600	Mar. 15	0.002	11.200	Mar. 15	0.065	8.700	Feb. 28	-0.391	46.400
Mar. 31	-0.063	9.000	Mar. 31	0.156	12.000	Mar. 31	0.259	6.000	Mar. 15	-0.418	36.800
Apr. 15	0.149	8.100	Apr. 15	0.134	9.000	Apr. 15	0.495	7.800	Mar. 31	-0.454	40.200
Apr. 30	0.304	7.800	Apr. 30	0.149	10.500	Apr. 30	0.493	7.000	Apr. 15	-0.382	38.700
May 15	0.480	7.300	May 15	0.191	10.400	May 15	0.376	5.700	Apr. 30	-0.452	30.500
May 31	0.349	8.500	May 31	0.351	7.800	May 31	0.569	4.300	May 15	-0.441	32.500
June 15	0.054	9.800	June 15	0.441	3.300	June 15	0.644	4.500	May 31	-0.426	30.900
June 30	0.008	10.200	June 30	0.649	2.900	June 30	0.405	4.800	June 15	-0.403	31.000
July 15	-0.134	13.200	July 15	0.892	2.400	July 15	0.390	6.200	June 30	-0.516	36.200
July 31	-0.177	16.300	July 31	0.918	4.000	July 31	0.457	9.000	July 15	-0.522	32.300
Aug. 15	-0.062	16.100	Aug. 15	4.880	4.600	Aug. 15	2.571	5.700	July 31	0.029	25.000
									Aug. 15	0.203	26.700

1966			1967			1968		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Dec. 15	-0.550	9.700	Dec. 15	-0.779	7.300	Dec. 15	-0.820	6.300
Dec. 31	-0.516	9.200	Dec. 31	-0.720	6.900	Dec. 31	-0.858	7.000
Jan. 15	-0.349	18.100	Jan. 15	-0.638	6.200	Jan. 15	-0.812	8.100
Jan. 31	-0.334	18.300	Jan. 31	-0.580	5.900	Jan. 31	-0.697	6.900
Feb. 15	-0.220	23.500	Feb. 15	-0.501	5.100	Feb. 15	-0.621	6.700
Feb. 28	-0.222	12.500	Feb. 28	-0.468	6.000	Feb. 28	-0.576	7.000
Mar. 15	-0.188	14.300	Mar. 15	-0.342	6.500	Mar. 15	-0.390	7.200
Mar. 31	0.084	13.700	Mar. 31	-0.237	5.200	Mar. 31	-0.444	8.800
Apr. 15	0.109	15.100	Apr. 15	-0.073	5.800	Apr. 15	-0.330	10.000
Apr. 30	-0.312	24.400	Apr. 30	-0.056	4.200	Apr. 30	-0.230	10.300
May 15	-0.446	25.300	May 15	0.163	4.600	May 15	-0.159	9.200
May 31	-0.471	30.600	May 31	0.136	3.700	May 31	-0.070	7.100
June 15	-0.605	40.200	June 15	0.082	7.300	June 15	0.008	9.400
June 30	-0.359	51.100	June 30	-0.002	7.000	June 30	-0.140	10.800
July 15	0.083	23.300	July 15	-0.117	10.300	July 15	0.095	9.700
July 31	0.454	21.900	July 31	0.388	7.800	July 31	-0.135	14.100
Aug. 15	2.370	45.600	Aug. 15	1.235	9.700	Aug. 15	0.608	13.200

\*

See Table 27.



Table 29  
SEPTEMBER OVER NOVEMBER CHICAGO SOYBEANS, 1958 - 1968

1958				1959				1960				1961			
Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.
Jan. 31	-0.723	2.200		Jan. 31	-0.817	2.500		Jan. 31	-0.874	2.000		Dec. 15	-0.911	3.500	
Feb. 15	-0.599	2.100		Feb. 15	-0.645	3.500		Feb. 15	-0.755	1.800		Dec. 31	-0.688	4.600	
Feb. 28	-0.485	1.700		Feb. 28	-0.495	4.000		Feb. 28	-0.681	1.600		Jan. 15	-0.607	8.000	
Mar. 15	-0.444	1.500		Mar. 15	-0.452	3.300		Mar. 15	-0.653	1.500		Jan. 31	-0.467	9.300	
Mar. 31	-0.307	1.600		Mar. 31	-0.302	4.000		Mar. 31	-0.573	1.500		Feb. 15	-0.390	7.800	
Apr. 15	-0.250	2.300		Apr. 15	-0.112	4.600		Apr. 15	-0.495	1.700		Feb. 28	-0.643	29.100	
Apr. 30	-0.271	2.700		Apr. 30	-0.055	4.200		Apr. 30	-0.459	1.600		Mar. 15	-0.521	14.500	
May 15	-0.175	1.700		May 15	-0.093	4.200		May 15	-0.479	0.900		Mar. 31	-0.459	12.700	
May 31	-0.046	1.600		May 31	-0.096	2.700		May 31	-0.362	1.700		Apr. 15	-0.355	17.000	
June 15	-0.267	1.500		June 15	-0.046	3.200		June 15	-0.361	1.400		Apr. 30	-0.430	12.600	
June 30	-0.356	0.900		June 30	-0.027	2.200		June 30	-0.426	1.300		May 15	-0.389	10.800	
July 15	-0.397	2.400		July 15	0.429	0.000		July 15	-0.246	1.700		May 31	-0.429	9.900	
July 31	-0.291	2.700		July 31	0.791	-1.200		July 31	-0.163	0.800		June 15	-0.311	6.500	
Aug. 15	-0.284	2.300		Aug. 15	1.092	-2.100		Aug. 15	0.138	-0.500		June 30	-0.369	8.400	
Aug. 31	0.024	1.100		Aug. 31	1.807	-2.000		Aug. 31	0.371	-0.100		July 15	-0.292	4.500	
Sept. 15	0.556	-0.300		Sept. 15	4.371	-2.500		Sept. 15	1.620	-1.200		July 31	-0.435	7.900	
												Aug. 15	-0.397	3.700	
												Aug. 31	-0.386	4.900	
												Sept. 15	-0.193	3.300	
1962				1963				1964				1965			
Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.
Dec. 15	-0.870	2.400		Dec. 15	-0.707	1.400		Dec. 15	-0.698	4.400		Nov. 30	-0.810	6.800	
Dec. 31	-0.821	2.400		Dec. 31	-0.693	1.400		Dec. 31	-0.476	5.400		Dec. 15	-0.679	7.200	
Jan. 15	-0.677	1.800		Jan. 15	-0.522	3.500		Jan. 15	-0.339	3.800		Dec. 31	-0.540	6.000	
Jan. 31	-0.623	1.000		Jan. 31	0.009	4.400		Jan. 31	-0.127	2.500		Jan. 15	-0.513	10.200	
Feb. 15	-0.643	1.000		Feb. 15	-0.005	3.100		Feb. 15	0.087	2.000		Jan. 31	-0.317	11.300	
Feb. 28	-0.598	1.000		Feb. 28	0.236	3.300		Feb. 28	0.096	2.100		Feb. 15	-0.266	8.600	
Mar. 15	-0.555	1.100		Mar. 15	0.417	2.500		Mar. 15	0.368	2.000		Feb. 28	-0.241	10.000	
Mar. 31	-0.492	1.800		Mar. 31	0.515	2.100		Mar. 31	0.689	1.300		Mar. 15	-0.194	8.500	
Apr. 15	-0.331	2.100		Apr. 15	0.722	1.700		Apr. 15	0.701	1.300		Mar. 31	0.074	8.800	
Apr. 30	-0.316	2.000		Apr. 30	1.244	2.000		Apr. 30	1.088	1.600		Apr. 15	0.010	8.600	
May 15	-0.351	2.000		May 15	1.986	2.000		May 15	1.259	1.100		Apr. 30	0.115	6.000	
May 31	-0.325	0.300		May 31	2.336	1.300		May 31	1.637	1.000		May 15	-0.010	7.300	
June 15	-0.262	0.800		June 15	2.766	1.200		June 15	1.686	0.900		May 31	0.145	6.000	
June 30	-0.167	0.200		June 30	2.820	1.500		June 30	1.729	1.000		June 15	0.122	5.800	
July 15	-0.066	0.500		July 15	2.569	0.300		July 15	1.774	1.200		June 30	0.005	8.000	
July 31	-0.055	0.000		July 31	1.636	2.000		July 31	1.743	1.300		July 15	0.059	6.000	
Aug. 15	-0.072	0.000		Aug. 15	1.381	1.200		Aug. 15	2.388	0.600		July 31	0.322	4.800	
Aug. 31	0.191	0.700		Aug. 31	1.709	1.700		Aug. 31	4.131	0.000		Aug. 15	0.300	4.000	
Sept. 15	0.706	4.300		Sept. 15	2.535	0.500		Sept. 15	6.2914	0.400		Aug. 31	0.217	4.800	
												Sept. 15	0.631	7.000	
1966				1967				1968							
Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.				
Dec. 15	-0.641	4.300		Dec. 15	-0.787	3.200		Dec. 15	-0.808	2.800					
Dec. 31	-0.547	4.900		Dec. 31	-0.668	3.000		Dec. 31	-0.812	2.900					
Jan. 15	-0.399	7.800		Jan. 15	-0.537	2.700		Jan. 15	-0.749	3.000					
Jan. 31	-0.326	6.300		Jan. 31	-0.351	2.800		Jan. 31	-0.556	2.500					
Feb. 15	-0.120	7.600		Feb. 15	-0.166	2.000		Feb. 15	-0.430	2.400					
Feb. 28	-0.207	2.900		Feb. 28	0.048	2.400		Feb. 28	-0.262	2.700					
Mar. 15	-0.027	4.400		Mar. 15	0.036	2.000		Mar. 15	0.180	2.300					
Mar. 31	0.295	3.800		Mar. 31	0.169	1.700		Mar. 31	0.274	2.000					
Apr. 15	0.247	5.800		Apr. 15	0.301	2.000		Apr. 15	0.298	2.500					
Apr. 30	0.469	7.900		Apr. 30	0.166	2.300		Apr. 30	0.605	2.800					
May 15	0.379	7.300		May 15	0.427	1.500		May 15	0.632	2.400					
May 31	0.318	9.600		May 31	0.596	1.500		May 31	0.907	2.000					
June 15	0.145	14.700		June 15	0.632	1.800		June 15	1.095	2.800					
June 30	0.142	16.200		June 30	0.559	2.300		June 30	1.162	3.000					
July 15	0.484	12.300		July 15	0.670	2.200		July 15	1.331	2.500					
July 31	0.420	10.900		July 31	0.851	2.000		July 31	1.058	3.400					
Aug. 15	0.428	19.100		Aug. 15	1.083	3.500		Aug. 15	0.621	3.400					
Aug. 31	-0.022	22.400		Aug. 31	0.541	9.900		Aug. 31	0.617	8.000					
Sept. 15	0.863	8.900		Sept. 15	2.081	5.300		Sept. 15	1.154	6.000					



Table 30

NOVEMBER OVER JANUARY CHICAGO SOYBEANS, 1958 - 1967<sup>1</sup>

1958			1959			1960			1961		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Mar. 31	-0.973	-3.500	Mar. 31	-0.952	-9.100	Mar. 31	-0.878	-3.700	Feb. 15	-0.709	-4.100
Apr. 15	-0.873	-3.300	Apr. 15	-0.848	-14.600	Apr. 15	-0.811	-3.600	Feb. 28	-0.526	-5.700
Apr. 30	-0.792	-3.500	Apr. 30	-0.781	-15.500	Apr. 30	-0.803	-3.800	Mar. 15	-0.406	-4.500
May 15	-0.792	-3.500	May 15	-0.781	-11.300	May 15	-0.796	-3.700	Mar. 31	-0.316	-4.300
May 31	-0.619	-3.300	May 31	-0.510	-16.500	May 31	-0.685	-3.700	Apr. 15	-0.166	-4.100
June 15	-0.603	-3.800	June 15	-0.625	-15.500	June 15	-0.667	-3.800	Apr. 30	0.156	-4.500
June 30	-0.565	-3.900	June 30	-0.620	-14.000	June 30	-0.623	-3.800	May 15	0.364	-4.600
July 15	-0.549	-4.000	July 15	-0.657	-11.500	July 15	-0.543	-4.100	May 31	0.306	-4.100
July 31	-0.525	-4.000	July 31	-0.666	-9.300	July 31	-0.505	-4.300	June 15	0.156	-4.500
Aug. 15	-0.476	-3.700	Aug. 15	-0.650	-12.400	Aug. 15	-0.379	-4.000	June 30	0.140	-4.700
Aug. 31	-0.464	-3.800	Aug. 31	-0.586	-16.400	Aug. 31	-0.335	-4.000	July 15	0.193	-4.500
Sept. 15	-0.391	-4.500	Sept. 15	-0.581	-14.500	Sept. 15	-0.209	-4.300	July 31	0.146	-4.000
Sept. 30	-0.139	-4.300	Sept. 30	-0.440	-9.400	Sept. 30	-0.043	-4.000	Aug. 15	0.153	-4.000
Oct. 15	0.482	-4.100	Oct. 15	0.157	-4.100	Oct. 15	0.352	-4.800	Aug. 31	0.176	-4.300
Oct. 31	2.795	-5.000	Oct. 31	1.196	1.500	Oct. 31	1.639	-5.100	Sept. 15	0.331	-4.300
Nov. 15	26.711	-4.000	Nov. 15	3.255	4.000	Nov. 15	13.103	-3.700	Sept. 30	0.509	-4.500
									Oct. 15	0.677	-4.500
									Oct. 31	1.848	-3.800
									Nov. 15	6.795	-1.500
1962			1963			1964			1965		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Feb. 15	-0.948	-4.000	Feb. 15	-0.848	-2.600	Feb. 15	-0.888	-3.800	Feb. 15	-0.755	-3.400
Feb. 28	-0.860	-3.900	Feb. 28	-0.629	-2.800	Feb. 28	-0.809	-3.600	Feb. 28	-0.655	-3.800
Mar. 15	-0.800	-3.800	Mar. 15	-0.525	-3.200	Mar. 15	-0.643	-3.700	Mar. 15	-0.590	-3.600
Mar. 31	-0.760	-3.800	Mar. 31	-0.455	-3.600	Mar. 31	-0.528	-3.300	Mar. 31	-0.573	-3.800
Apr. 15	-0.705	-3.900	Apr. 15	-0.356	-3.200	Apr. 15	-0.460	-3.500	Apr. 15	-0.374	-3.700
Apr. 30	-0.608	-4.200	Apr. 30	-0.308	-3.500	Apr. 30	-0.411	-3.700	Apr. 30	-0.350	-3.500
May 15	-0.614	-4.000	May 15	-0.363	-3.300	May 15	-0.403	-4.000	May 15	-0.364	-3.800
May 31	-0.513	-4.300	May 31	-0.396	-3.300	May 31	-0.439	-3.800	May 31	-0.318	-3.700
June 15	-0.157	-3.800	June 15	-0.159	-3.300	June 15	-0.357	-3.700	June 15	-0.296	-3.800
June 30	-0.129	-3.700	June 30	-0.193	-4.200	June 30	-0.294	-4.400	June 30	-0.342	-3.800
July 15	-0.220	-3.500	July 15	-0.230	-3.300	July 15	-0.230	-4.000	July 15	-0.247	-3.500
July 31	-0.285	-3.200	July 31	-0.140	-3.500	July 31	-0.209	-3.800	July 31	-0.334	-3.900
Aug. 15	-0.233	-3.700	Aug. 15	-0.045	-3.500	Aug. 15	-0.139	-4.000	Aug. 15	-0.349	-3.700
Aug. 31	-0.171	-3.200	Aug. 31	-0.046	-3.300	Aug. 31	-0.036	-4.000	Aug. 31	-0.230	-3.400
Sept. 15	-0.239	-3.500	Sept. 15	-0.110	-3.800	Sept. 15	-0.185	-3.600	Sept. 15	-0.199	-3.700
Sept. 30	-0.034	-3.900	Sept. 30	0.080	-4.500	Sept. 30	0.087	-2.700	Sept. 30	-0.016	-3.800
Oct. 15	0.227	-3.800	Oct. 15	0.631	-4.400	Oct. 15	0.630	-2.900	Oct. 15	0.239	-4.000
Oct. 31	1.320	-2.200	Oct. 31	1.495	-3.700	Oct. 31	1.837	-4.700	Oct. 31	0.648	-3.500
Nov. 15	4.276	-1.800	Nov. 15	5.112	-4.200	Nov. 15	7.675	-3.300	Nov. 15	3.083	-2.500
1966			1967								
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.						
Feb. 15	-0.791	-3.100	Feb. 15	-0.726	-3.800						
Feb. 28	-0.611	-3.500	Feb. 28	-0.688	-3.400						
Mar. 15	-0.565	-3.300	Mar. 15	-0.604	-3.500						
Mar. 31	-0.568	-3.800	Mar. 31	-0.569	-3.500						
Apr. 15	-0.273	-4.100	Apr. 15	-0.434	-3.600						
Apr. 30	-0.192	-4.400	Apr. 30	-0.460	-3.500						
May 15	-0.057	-4.100	May 15	-0.499	-3.700						
May 31	-0.144	-4.100	May 31	-0.462	-3.700						
June 15	-0.199	-3.900	June 15	-0.395	-3.400						
June 30	-0.157	-3.600	June 30	-0.245	-3.900						
July 15	-0.208	-4.200	July 15	-0.214	-3.900						
July 31	-0.174	-3.900	July 31	-0.090	-3.400						
Aug. 15	-0.303	-4.300	Aug. 15	-0.190	-3.700						
Aug. 31	-0.112	-4.100	Aug. 31	0.110	-2.900						
Sept. 15	-0.104	-5.000	Sept. 15	0.048	-3.400						
Sept. 30	0.110	-5.000	Sept. 30	0.144	-3.300						
Oct. 15	0.283	-3.600	Oct. 15	0.241	-3.500						
Oct. 31	0.992	-3.200	Oct. 31	0.629	-4.100						
Nov. 15	2.440	4.400	Nov. 15	2.576	-3.800						

<sup>1</sup> This spread compares months traded in different calendar years; e.g., November 1958 over January 1959. The labels given for each spread refer to the calendar year in which December trades, thus the spread labeled 1958 compares December 1958 with March 1959. Also since data for 1969 were not available, only 10 spreads could be considered.





Table 31

JANUARY OVER MARCH CHICAGO SOYBEAN OIL, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.
May 31	-0.841	0.020	June 15	0.430	0.000	May 31	-0.610	0.020	May 31	-0.658	-0.010
June 15	-0.447	-0.010	June 30	1.053	-0.050	June 15	-0.298	0.010	June 15	0.734	-0.010
June 30	0.001	0.000	July 15	1.529	0.000	June 30	-0.180	-0.010	June 30	2.291	-0.050
July 15	0.764	0.000	July 31	1.656	-0.020	July 15	-0.005	-0.020	July 15	3.022	-0.020
July 31	1.012	0.010	Aug. 15	1.744	0.000	July 31	0.156	-0.030	July 31	4.335	-0.030
Aug. 15	1.455	-0.020	Aug. 31	2.247	-0.020	Aug. 15	0.130	-0.010	Aug. 15	3.620	-0.010
Aug. 31	1.763	0.010	Sept. 15	1.949	-0.040	Aug. 31	0.338	-0.010	Aug. 31	3.638	0.010
Sept. 15	1.709	0.000	Sept. 30	1.864	-0.030	Sept. 15	0.473	0.000	Sept. 15	3.113	-0.010
Sept. 30	1.494	-0.090	Oct. 15	1.803	0.030	Sept. 30	0.469	0.000	Sept. 30	2.632	0.020
Oct. 15	1.459	0.000	Oct. 31	1.946	0.120	Oct. 15	0.494	-0.040	Oct. 15	2.212	0.080
Oct. 31	1.027	0.040	Nov. 15	0.731	0.110	Oct. 31	0.453	-0.060	Oct. 31	2.174	0.110
Nov. 15	1.115	-0.040	Nov. 30	0.502	0.060	Nov. 15	0.365	-0.140	Nov. 15	1.698	0.120
Nov. 30	1.196	-0.070	Dec. 15	0.385	0.100	Nov. 30	0.378	-0.190	Nov. 30	1.518	0.250
Dec. 15	1.444	-0.070	Dec. 31	0.971	0.040	Dec. 15	0.403	-0.200	Dec. 15	1.036	0.120
Dec. 31	2.117	-0.110	Jan. 15	3.508	0.140	Dec. 31	1.255	-0.100	Dec. 31	1.816	0.070
Jan. 15	17.153	-0.130				Jan. 15	10.047	-0.140	Jan. 15	5.414	0.080

1962			1963			1964			1965		
Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.
June 30	-0.996	0.050	July 15	-0.925	-0.100	Apr. 15	-0.815	-0.100	Apr. 15	-0.804	-0.120
July 15	-0.930	-0.020	July 31	-0.740	-0.140	Apr. 30	-0.085	-0.110	Apr. 30	-0.259	-0.120
July 31	-0.909	-0.030	Aug. 15	-0.521	-0.130	May 15	-0.145	-0.100	May 15	-0.202	-0.110
Aug. 15	-0.302	-0.110	Aug. 31	-0.293	-0.130	May 31	-0.351	-0.090	May 31	-0.018	-0.100
Aug. 31	-0.033	-0.110	Sept. 15	-0.310	-0.170	June 15	-0.425	-0.070	June 15	0.162	-0.110
Sept. 15	-0.044	-0.130	Sept. 30	-0.352	-0.170	June 30	-0.511	-0.100	June 30	0.124	-0.100
Sept. 30	-0.065	-0.150	Oct. 15	-0.156	-0.140	July 15	-0.348	-0.100	July 15	0.243	-0.100
Oct. 15	0.016	-0.040	Oct. 31	0.068	-0.100	July 31	-0.290	-0.110	July 31	0.147	-0.110
Oct. 31	-0.036	-0.090	Nov. 15	0.125	-0.130	Aug. 15	-0.295	-0.140	Aug. 15	0.149	-0.110
Nov. 15	0.061	-0.070	Nov. 30	0.124	-0.190	Aug. 31	-0.304	-0.180	Aug. 31	0.106	-0.100
Nov. 30	0.078	-0.120	Dec. 15	0.509	-0.200	Sept. 15	-0.491	-0.190	Sept. 15	0.172	-0.080
Dec. 15	0.418	-0.150	Dec. 31	1.106	-0.160	Sept. 30	-0.452	-0.150	Sept. 30	0.170	0.010
Dec. 31	1.234	-0.230	Jan. 15	4.639	-0.070	Oct. 15	-0.443	-0.160	Oct. 15	0.157	0.110
Jan. 15	17.065	-0.190				Oct. 31	-0.460	-0.120	Oct. 31	0.295	0.100
						Nov. 15	-0.434	-0.190	Nov. 15	0.241	0.110
						Nov. 30	-0.294	-0.250	Nov. 30	0.417	0.200
						Dec. 15	-0.188	-0.220	Dec. 15	0.628	0.120
						Dec. 31	0.242	-0.280	Dec. 31	0.990	0.100
						Jan. 15	28.450	-0.200	Jan. 15	5.492	0.080

1966			1967			1968		
Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.
Apr. 15	-0.673	0.020	Apr. 15	-0.801	0.010	Apr. 15	-0.675	0.020
Apr. 30	-0.245	-0.020	Apr. 30	-0.710	0.040	Apr. 30	-0.500	0.010
May 15	-0.167	-0.020	May 15	-0.587	0.000	May 15	-0.536	-0.030
May 31	-0.027	-0.040	May 31	-0.348	0.010	May 31	-0.551	-0.010
June 15	0.325	-0.030	June 15	-0.177	0.010	June 15	-0.302	-0.020
June 30	0.578	-0.010	June 30	0.114	0.050	June 30	-0.337	-0.050
July 15	0.987	0.000	July 15	0.296	0.090	July 15	-0.301	-0.060
July 31	1.387	0.020	July 31	0.512	0.100	July 31	-0.293	-0.070
Aug. 15	1.435	-0.010	Aug. 15	0.906	0.140	Aug. 15	-0.030	-0.050
Aug. 31	1.402	0.120	Aug. 31	1.053	-0.020	Aug. 31	0.156	-0.030
Sept. 15	0.889	0.110	Sept. 15	0.769	0.060	Sept. 15	0.256	-0.120
Sept. 30	0.914	0.080	Sept. 30	0.275	-0.010	Sept. 30	0.083	-0.100
Oct. 15	0.519	0.120	Oct. 15	0.106	-0.040	Oct. 15	-0.125	-0.150
Oct. 31	0.510	0.080	Oct. 31	-0.005	0.060	Oct. 31	-0.123	-0.130
Nov. 15	0.177	0.260	Nov. 15	0.047	0.000	Nov. 15	-0.095	-0.140
Nov. 30	0.139	0.240	Nov. 30	0.081	0.050	Nov. 30	0.113	-0.130
Dec. 15	0.136	0.170	Dec. 15	0.163	0.060	Dec. 15	0.318	-0.130
Dec. 31	0.324	0.130	Dec. 31	0.913	0.020	Dec. 31	0.908	-0.200
Jan. 15	2.382	0.300	Jan. 15	7.637	-0.100	Jan. 15	18.285	-0.210



Table 32

JANUARY OVER MAY CHICAGO SOYBEAN OIL, 1958 - 1968

1958		DI	Spread c/lb.
Date			
July	31	-0.673	0.010
Aug.	15	-0.383	-0.010
Aug.	31	0.069	0.000
Sept.	15	0.276	-0.020
Sept.	30	0.605	-0.140
Oct.	15	0.707	0.000
Oct.	31	0.519	0.070
Nov.	15	0.494	-0.040
Nov.	30	0.555	-0.070
Dec.	15	0.593	-0.060
Dec.	31	1.451	-0.120
Jan.	15	14.187	-0.180

1959		
Date	DI	Spread ¢/lb.
June 30	-0.528	-0.050
July 15	-0.254	0.010
July 31	-0.103	0.000
Aug. 15	0.172	0.000
Aug. 31	0.499	-0.030
Sept. 15	0.965	-0.040
Sept. 30	1.094	-0.060
Oct. 15	1.142	0.030
Oct. 31	1.101	0.160
Nov. 15	0.279	0.120
Nov. 30	0.073	0.080
Dec. 15	0.085	0.140
Dec. 31	0.661	0.090
Jan. 15	2.285	0.290

1960 Date	DI	Spread ¢/lb.
May 31	-0.704	0.000
June 15	-0.506	0.030
June 30	-0.460	0.020
July 15	-0.231	-0.010
July 31	-0.128	-0.010
Aug. 15	-0.120	0.000
Aug. 31	0.026	0.020
Sept. 15	0.194	0.030
Sept. 30	0.182	0.040
Oct. 15	0.294	-0.010
Oct. 31	0.361	-0.090
Nov. 15	0.368	-0.200
Nov. 30	0.421	-0.290
Dec. 15	0.217	-0.310
Dec. 31	0.791	-0.270
Jan. 15	8.095	-0.290

1961			
Date	DI	Spread	c/lb.
June 30	-0.023	-0.050	
July 15	0.314	-0.010	
July 31	0.891	-0.020	
Aug. 15	1.003	0.020	
Aug. 31	1.490	0.020	
Sept. 15	1.239	0.000	
Sept. 30	1.225	0.030	
Oct. 15	1.178	0.120	
Oct. 31	1.902	0.160	
Nov. 15	1.028	0.240	
Nov. 30	0.980	0.420	
Dec. 15	0.635	0.240	
Dec. 31	1.409	0.170	
Jan. 15	5.198	0.130	

1962		
Date	DI	Spread c/lb.
Aug. 15	-0.936	-0.100
Aug. 31	-0.726	-0.100
Sept. 15	-0.561	-0.160
Sept. 30	-0.517	-0.190
Oct. 15	-0.341	-0.110
Oct. 31	-0.192	-0.170
Nov. 15	-0.110	-0.150
Nov. 30	-0.052	-0.170
Dec. 15	0.170	-0.190
Dec. 31	1.189	-0.350
Jan. 15	14.573	-0.290

1963			
Date		DI	Spread ¢/lb.
July	31	-0.946	-0.210
Aug.	15	-0.795	-0.170
Aug.	31	-0.667	-0.210
Sept.	15	-0.533	-0.290
Sept.	30	-0.579	-0.270
Oct.	15	-0.025	-0.240
Oct.	31	0.084	-0.200
Nov.	15	-0.055	-0.220
Nov.	30	-0.303	-0.300
Dec.	15	-0.240	-0.310
Dec.	31	-0.212	-0.270
Jan.	15	1.691	-0.130

1964		DI	Spread c/lb.
Date			
June	15	-0.978	-0.210
June	30	-0.936	-0.200
July	15	-0.666	-0.200
July	31	-0.680	-0.210
Aug.	15	-0.664	-0.270
Aug.	31	-0.647	-0.340
Sept.	15	-0.675	-0.360
Sept.	30	-0.716	-0.280
Oct.	15	-0.713	-0.250
Oct.	31	-0.706	-0.260
Nov.	15	-0.699	-0.240
Nov.	30	-0.632	-0.450
Dec.	15	-0.489	-0.380
Dec.	31	-0.191	-0.500
Jan.	15	19.749	-0.410

1965			
Date		DI	Spread ¢/lb.
July	15	-0.799	-0.200
July	31	-0.636	-0.210
Aug.	15	-0.589	-0.210
Aug.	31	-0.592	-0.170
Sept.	15	-0.346	-0.120
Sept.	30	-0.276	0.010
Oct.	15	-0.210	0.160
Oct.	31	0.053	0.210
Nov.	15	0.121	0.230
Nov.	30	0.342	0.360
Dec.	15	0.337	0.200
Dec.	31	0.644	0.160
Jan.	15	4.886	0.150

1966			
Date	DI	Spread	¢/lb.
June 15	-0.889	-0.050	
June 30	-0.787	0.000	
July 15	-0.368	-0.010	
July 31	-0.231	0.010	
Aug. 15	-0.033	0.000	
Aug. 31	0.137	0.220	
Sept. 15	0.312	0.160	
Sept. 30	0.430	0.160	
Oct. 15	0.281	0.220	
Oct. 31	0.415	0.140	
Nov. 15	0.175	0.420	
Nov. 30	0.151	0.340	
Dec. 15	0.145	0.240	
Dec. 31	0.394	0.210	
Jan. 15	3.073	0.460	

1967		DI	Spread ¢/lb.
Date			
June	15	-0.939	0.020
June	30	-0.582	0.110
July	15	-0.319	0.120
July	31	-0.085	0.100
Aug.	15	0.377	0.240
Aug.	31	0.635	0.040
Sept.	15	0.483	0.060
Sept.	30	0.107	-0.050
Oct.	15	-0.071	-0.100
Oct.	31	-0.106	0.060
Nov.	15	-0.062	0.000
Nov.	30	-0.110	0.050
Dec.	15	-0.093	0.090
Dec.	30	0.429	0.010
Jan.	15	6.413	-0.170

1968		
Date	DI	Spread ¢/lb.
June 15	-0.910	-0.060
June 30	-0.854	-0.120
July 15	-0.753	-0.160
July 31	-0.736	-0.170
Aug. 15	-0.473	-0.100
Aug. 31	-0.298	-0.120
Sept. 15	-0.171	-0.220
Sept. 30	-0.207	-0.220
Oct. 15	-0.232	-0.280
Oct. 31	-0.251	-0.290
Nov. 15	-0.173	-0.280
Nov. 30	-0.070	-0.240
Dec. 15	0.391	-0.280
Dec. 31	0.917	-0.380
Jan. 15	18.124	-0.360



Table 33

JANUARY OVER JULY CHICAGO SOYBEAN OIL, 1958 - 1968

1958		
Date	DI	Spread ¢/lb.
Sept. 30	-1.011	-0.120
Oct. 15	-0.952	0.100
Oct. 31	-0.937	0.120
Nov. 15	-0.922	0.070
Nov. 30	-0.830	-0.030
Dec. 15	-0.658	0.050
Dec. 31	-0.353	-0.020
Jan. 15	4.621	-0.130

1959			
Date	DI	Spread ¢/lb.	
Aug. 15	-1.073	0.030	
Aug. 31	-1.056	-0.010	
Sept. 15	-1.028	-0.040	
Sept. 30	-0.904	-0.060	
Oct. 15	-0.852	0.060	
Oct. 31	-0.678	0.190	
Nov. 15	-0.749	0.140	
Nov. 30	-0.699	0.070	
Dec. 15	-0.554	0.140	
Dec. 31	-0.107	0.090	
Jan. 15	1.195	0.400	

1960		
Date	DI	Spread ¢/lb.
Sept. 30	-1.007	0.010
Oct. 15	-0.815	-0.060
Oct. 31	-0.685	-0.110
Nov. 15	-0.433	-0.250
Nov. 30	-0.082	-0.370
Dec. 15	-0.104	-0.410
Dec. 31	0.474	-0.380
Jan. 15	7.188	-0.390

1961		DI	Spread ¢/lb.
Date			
Oct.	15	-0.893	0.160
Oct.	31	-0.399	0.250
Nov.	15	-0.156	0.350
Nov.	30	-0.049	0.570
Dec.	15	-0.171	0.390
Dec.	31	0.362	0.270
Jan.	15	3.857	0.240

1962		
Date	DI	Spread ¢/lb.
Sept. 30	-1.036	-0.210
Oct. 15	-0.968	-0.110
Oct. 31	-0.832	-0.250
Nov. 15	-0.781	-0.200
Nov. 30	-0.651	-0.220
Dec. 15	-0.536	-0.210
Dec. 31	0.118	-0.450
Jan. 15	9.000	-0.330

1963		DI	Spread ¢/lb.
Date			
Aug.	31	-1.019	-0.260
Sept.	15	-0.941	-0.370
Sept.	30	-0.925	-0.370
Oct.	15	-0.868	-0.330
Oct.	31	-0.692	-0.260
Nov.	15	-0.696	-0.320
Nov.	30	-0.746	-0.410
Dec.	15	-0.690	-0.380
Dec.	31	-0.634	-0.360
Jan.	15	0.167	-0.170

1964		
Date	DI	Spread c/lb.
Aug. 15	-1.031	-0.400
Aug. 31	-0.998	-0.450
Sept. 15	-0.800	-0.480
Sept. 30	-0.838	-0.430
Oct. 15	-0.845	-0.400
Oct. 31	-0.809	-0.360
Nov. 15	-0.807	-0.340
Nov. 30	-0.727	-0.600
Dec. 15	-0.644	-0.550
Dec. 31	-0.438	-0.680
Jan. 15	13.482	-0.540

1965			
Date		DI	Spread ¢/lb.
Aug.	31	-1.057	-0.200
Sept.	15	-0.889	-0.140
Sept.	30	-0.758	0.000
Oct.	15	-0.731	0.170
Oct.	31	-0.667	0.280
Nov.	15	-0.534	0.330
Nov.	30	-0.267	0.500
Dec.	15	-0.232	0.260
Dec.	31	0.056	0.240
Jan.	15	2.890	0.220

1966		
Date	DI	Spread ¢/lb.
Sept. 15	-0.888	0.260
Sept. 30	-0.710	0.200
Oct. 15	-0.646	0.220
Oct. 31	-0.475	0.200
Nov. 15	-0.439	0.520
Nov. 30	-0.378	0.440
Dec. 15	-0.025	0.320
Dec. 31	0.239	0.270
Jan. 15	2.806	0.540

1967		DI	Spread ¢/lb.
Date			
Aug.	15	-0.982	0.260
Aug.	31	-0.886	0.130
Sept.	15	-0.729	0.110
Sept.	30	-0.708	-0.040
Oct.	15	-0.705	-0.140
Oct.	31	-0.664	0.060
Nov.	15	-0.568	0.000
Nov.	30	-0.585	0.080
Dec.	15	-0.427	0.120
Dec.	31	0.107	0.010
Jan.	15	5.053	-0.210

1968		
Date	DI	Spread ¢/lb.
Aug. 31	-0.952	-0.130
Sept. 15	-0.920	-0.250
Sept. 30	-0.893	-0.230
Oct. 15	-0.807	-0.330
Oct. 31	-0.796	-0.420
Nov. 15	-0.689	-0.390
Nov. 30	-0.583	-0.380
Dec. 15	-0.445	-0.420
Dec. 31	-0.048	-0.530
Jan. 15	10.359	-0.500



Table 34

MARCH OVER JULY CHICAGO SOYBEAN OIL, 1958 - 1968

1958		
Date	DI	Spread ¢/lb.
Sept. 30	-1.027	-0.030
Oct. 15	-1.006	0.100
Oct. 31	-0.985	0.080
Nov. 15	-0.985	0.110
Nov. 30	-0.944	0.040
Dec. 15	-0.890	0.120
Dec. 31	-0.827	0.090
Jan. 15	-0.733	0.000
Jan. 31	-0.635	0.060
Feb. 15	-0.463	0.100
Feb. 28	0.068	-0.060
Mar. 15	2.094	0.110

1959		
Date	DI	Spread ¢/lb.
Aug. 15	-1.054	0.030
Aug. 31	-1.049	0.010
Sept. 15	-1.040	0.000
Sept. 30	-0.994	-0.030
Oct. 15	-0.976	0.030
Oct. 31	-0.921	0.070
Nov. 15	-0.864	0.030
Nov. 30	-0.805	0.010
Dec. 15	-0.681	0.040
Dec. 31	-0.573	0.050
Jan. 15	-0.578	0.260
Jan. 31	-0.377	0.170
Feb. 15	-0.069	0.210
Feb. 28	0.720	0.140
Mar. 15	3.368	0.080

1960		
Date	DI	Spread ¢/lb.
Sept. 30	-1.008	0.010
Oct. 15	-0.885	-0.020
Oct. 31	-0.793	-0.050
Nov. 15	-0.598	-0.110
Nov. 30	-0.350	-0.180
Dec. 15	-0.378	-0.210
Dec. 31	-0.364	-0.280
Jan. 15	-0.289	-0.250
Jan. 31	-0.173	-0.310
Feb. 15	0.161	-0.340
Feb. 28	1.021	-0.370
Mar. 15	12.202	-0.230

1961			
Date		DI	Spread c/lb.
Oct.	15	-1.004	0.080
Oct.	31	-0.851	0.140
Nov.	15	-0.731	0.230
Nov.	30	-0.668	0.320
Dec.	15	-0.628	0.270
Dec.	31	-0.561	0.200
Jan.	15	-0.297	0.160
Jan.	31	0.030	0.000
Feb.	15	0.623	-0.020
Feb.	28	2.034	0.240
Mar.	15	8.995	0.620

1962	DI	Spread ¢/lb.
Date		
Sept. 30	-1.029	-0.060
Oct. 15	-0.956	-0.070
Oct. 31	-0.817	-0.160
Nov. 15	-0.788	-0.130
Nov. 30	-0.677	-0.100
Dec. 15	-0.685	-0.060
Dec. 31	-0.517	-0.220
Jan. 15	-0.479	-0.140
Jan. 31	-0.446	-0.320
Feb. 15	-0.341	-0.310
Feb. 28	0.202	-0.370
Mar. 15	3.672	-0.280

1963		DI	Spread ¢/lb.
Date			
Aug.	31	-0.995	-0.130
Sept.	15	-0.895	-0.200
Sept.	30	-0.862	-0.200
Oct.	15	-0.832	-0.190
Oct.	31	-0.710	-0.160
Nov.	15	-0.731	-0.190
Nov.	30	-0.779	-0.220
Dec.	15	-0.808	-0.180
Dec.	31	-0.844	-0.200
Jan.	15	-0.828	-0.100
Jan.	31	-0.725	-0.150
Feb.	15	-0.594	-0.120
Feb.	28	-0.179	-0.240
Mar.	15	1.571	-0.170

1964			
Date	DI	Spread	¢/lb.
Aug. 15	-1.021	-0.260	
Aug. 31	-0.981	-0.270	
Sept. 15	-0.591	-0.290	
Sept. 30	-0.684	-0.280	
Oct. 15	-0.699	-0.240	
Oct. 31	-0.621	-0.240	
Nov. 15	-0.637	-0.150	
Nov. 30	-0.617	-0.350	
Dec. 15	-0.564	-0.330	
Dec. 31	-0.559	-0.400	
Jan. 15	-0.527	-0.340	
Jan. 31	-0.540	-0.480	
Feb. 15	-0.371	-0.350	
Feb. 28	0.063	-0.470	
Mar. 15	17.351	-0.380	

1965		
Date	DI	Spread ¢/lb.
Aug. 31	-1.044	-0.100
Sept. 15	-0.903	-0.060
Sept. 30	-0.787	-0.010
Oct. 15	-0.756	0.060
Oct. 31	-0.743	0.180
Nov. 15	-0.626	0.220
Nov. 30	-0.495	0.300
Dec. 15	-0.544	0.140
Dec. 31	-0.495	0.140
Jan. 15	-0.450	0.140
Jan. 31	-0.213	0.020
Feb. 15	0.255	0.150
Feb. 28	0.702	0.090
Mar. 15	2.931	0.280

1966		
Date	DI	Spread ¢/lb.
Sept. 15	-0.959	0.150
Sept. 30	-0.869	0.120
Oct. 15	-0.774	0.100
Oct. 31	-0.665	0.120
Nov. 15	-0.519	0.260
Nov. 30	-0.450	0.200
Dec. 15	-0.152	0.150
Dec. 31	-0.085	0.140
Jan. 15	0.073	0.240
Jan. 31	0.266	0.260
Feb. 15	0.724	0.310
Feb. 28	1.282	0.270
Mar. 15	5.078	0.120

1967		DI	Spread ¢/lb.
Date			
Aug. 15	-1.001	0.120	
Aug. 31	-0.967	0.150	
Sept. 15	-0.858	0.050	
Sept. 30	-0.771	-0.030	
Oct. 15	-0.729	-0.100	
Oct. 31	-0.649	0.000	
Nov. 15	-0.583	0.000	
Nov. 30	-0.610	0.030	
Dec. 15	-0.508	0.060	
Dec. 31	-0.443	-0.010	
Jan. 15	-0.335	-0.110	
Jan. 31	-0.200	0.010	
Feb. 15	0.162	-0.020	
Feb. 28	1.069	-0.060	
Mar. 15	9.054	-0.090	

1968		
Date	DI	Spread c/lb.
Aug. 31	-0.949	-0.100
Sept. 15	-0.938	-0.130
Sept. 30	-0.896	-0.130
Oct. 15	-0.772	-0.180
Oct. 31	-0.760	-0.290
Nov. 15	-0.652	-0.250
Nov. 30	-0.628	-0.250
Dec. 15	-0.585	-0.290
Dec. 31	-0.512	-0.330
Jan. 15	-0.435	-0.290
Jan. 31	-0.229	-0.210
Feb. 15	0.259	-0.230
Feb. 28	0.940	-0.110
Mar. 15	7.954	-0.170





Table 35

JULY OVER SEPTEMBER CHICAGO SOYBEAN OIL, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.
Oct. 31	-1.042	0.270	Dec. 15	-1.003	0.030	Nov. 15	-1.016	0.010	Oct. 31	-0.963	0.160
Nov. 15	-0.490	0.220	Dec. 31	-0.987	0.090	Nov. 30	-0.993	-0.030	Nov. 15	-0.949	0.270
Nov. 30	-0.520	0.260	Jan. 15	-0.869	0.020	Dec. 15	-0.910	-0.040	Nov. 30	-0.939	0.250
Dec. 15	-0.775	0.260	Jan. 31	-0.934	0.150	Dec. 31	-0.864	-0.020	Dec. 15	-0.932	0.230
Dec. 31	-0.747	0.250	Feb. 15	-0.890	0.240	Jan. 15	-0.851	-0.020	Dec. 31	-0.916	0.330
Jan. 15	-0.622	0.360	Feb. 28	-0.870	0.240	Jan. 31	-0.842	-0.030	Jan. 15	-0.876	0.490
Jan. 31	-0.595	0.180	Mar. 15	-0.776	0.260	Feb. 15	-0.817	-0.100	Jan. 31	-0.790	0.430
Feb. 15	-0.694	0.200	Mar. 31	-0.694	0.200	Feb. 28	-0.800	-0.120	Feb. 15	-0.675	0.120
Feb. 28	-0.699	0.070	Apr. 15	-0.695	0.210	Mar. 15	-0.754	-0.100	Feb. 28	-0.748	0.530
Mar. 15	-0.730	0.050	Apr. 30	-0.706	0.050	Mar. 31	-0.662	0.110	Mar. 15	-0.809	0.580
Mar. 31	-0.718	0.070	May 15	-0.615	0.070	Apr. 15	-0.533	0.060	Mar. 31	-0.874	1.000
Apr. 15	-0.767	0.060	May 31	-0.506	0.100	Apr. 30	-0.543	0.000	Apr. 15	-0.902	0.770
Apr. 30	-0.727	0.040	June 15	-0.450	0.170	May 15	-0.541	0.030	Apr. 30	-0.913	0.770
May 15	-0.654	0.010	June 30	0.220	0.160	May 31	-0.556	0.180	May 15	-0.890	0.520
May 31	-0.508	0.000	July 15	1.204	0.110	June 15	-0.380	0.290	May 31	-0.846	0.710
June 15	-0.170	-0.020				June 30	0.014	0.210	June 15	-0.704	0.280
June 30	0.383	-0.040				July 15	1.991	0.350	June 30	-0.345	0.270
July 15	2.482	0.040							July 15	0.661	0.310

1962			1963			1964			1965		
Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.
Dec. 15	-0.989	0.100	Nov. 30	-1.040	0.090	Nov. 15	-1.037	0.460	Oct. 15	-1.044	0.470
Dec. 31	-1.001	0.110	Dec. 15	-1.025	0.090	Nov. 30	-1.012	0.170	Oct. 31	-1.003	0.470
Jan. 15	-0.929	0.240	Dec. 31	-0.986	-0.010	Dec. 15	-0.972	0.000	Nov. 15	-0.857	0.590
Jan. 31	-0.843	0.020	Jan. 15	-0.830	-0.010	Dec. 31	-0.975	0.040	Nov. 30	-0.852	1.060
Feb. 15	-0.744	-0.050	Jan. 31	-0.745	0.180	Jan. 15	-0.940	-0.020	Dec. 15	-0.786	0.880
Feb. 28	-0.738	-0.040	Feb. 15	-0.713	0.020	Jan. 31	-0.923	-0.060	Dec. 31	-0.796	0.910
Mar. 15	-0.744	-0.020	Feb. 28	-0.765	0.060	Feb. 15	-0.923	-0.070	Jan. 15	-0.809	0.930
Mar. 31	-0.780	-0.030	Mar. 15	-0.794	0.070	Feb. 28	-0.930	-0.120	Jan. 31	-0.801	1.260
Apr. 15	-0.777	0.080	Mar. 31	-0.798	0.000	Mar. 15	-0.926	-0.010	Feb. 15	-0.771	1.080
Apr. 30	-0.791	0.020	Apr. 15	-0.815	-0.060	Mar. 31	-0.902	-0.080	Feb. 28	-0.763	1.260
May 15	-0.765	-0.100	Apr. 30	-0.814	-0.020	Apr. 15	-0.889	-0.050	Mar. 15	-0.698	1.160
May 31	-0.719	-0.140	May 15	-0.862	-0.020	Apr. 30	-0.880	-0.100	Mar. 31	-0.706	1.240
June 15	-0.608	-0.190	May 31	-0.866	-0.050	May 15	-0.866	-0.110	Apr. 15	-0.758	1.180
June 30	0.297	-0.230	June 15	-0.841	0.000	May 31	-0.835	-0.120	Apr. 30	-0.708	0.780
July 15	18.214	-0.150	June 30	-0.235	0.030	June 15	-0.772	-0.120	May 15	-0.690	0.670
			July 15	3.613	-0.060	June 30	-0.263	-0.150	May 31	-0.667	0.770
						July 15	6.193	-0.010	June 15	-0.536	0.610
									June 30	-0.308	0.730
									July 15	0.544	0.630

1966			1967			1968		
Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.
Oct. 15	-0.964	0.350	Oct. 15	-1.031	0.090	Oct. 15	-1.028	0.030
Oct. 31	-0.923	0.340	Oct. 31	-1.017	0.160	Oct. 31	-0.905	0.010
Nov. 15	-0.871	0.350	Nov. 15	-0.986	0.140	Nov. 15	-0.694	-0.010
Nov. 30	-0.785	0.280	Nov. 30	-0.979	0.110	Nov. 30	-0.724	-0.040
Dec. 15	-0.828	0.250	Dec. 15	-1.003	0.150	Dec. 15	-0.747	-0.010
Dec. 31	-0.829	0.310	Dec. 31	-0.987	0.190	Dec. 31	-0.774	-0.010
Jan. 15	-0.827	0.420	Jan. 15	-0.967	0.070	Jan. 15	-0.763	-0.030
Jan. 31	-0.814	0.280	Jan. 31	-0.948	0.100	Jan. 31	-0.776	0.000
Feb. 15	-0.833	0.480	Feb. 15	-0.932	0.090	Feb. 15	-0.776	-0.040
Feb. 28	-0.798	0.170	Feb. 28	-0.910	0.140	Feb. 28	-0.784	-0.010
Mar. 15	-0.776	0.150	Mar. 15	-0.913	0.180	Mar. 15	-0.804	0.000
Mar. 31	-0.788	0.180	Mar. 31	-0.914	0.190	Mar. 31	-0.823	-0.030
Apr. 15	-0.802	0.120	Apr. 15	-0.880	0.090	Apr. 15	-0.853	0.010
Apr. 30	-0.824	0.140	Apr. 30	-0.825	0.000	Apr. 30	-0.860	0.150
May 15	-0.792	0.140	May 15	-0.792	-0.040	May 15	-0.854	0.140
May 31	-0.772	0.060	May 31	-0.708	-0.040	May 31	-0.796	0.020
June 15	-0.547	-0.100	June 15	-0.549	-0.060	June 15	-0.534	0.030
June 30	0.256	-0.020	June 30	0.139	-0.140	June 30	0.011	-0.040
July 15	3.300	0.100	July 15	5.645	-0.130	July 15	5.264	-0.040



Table 36

AUGUST OVER OCTOBER CHICAGO SOYBEAN OIL, 1962 - 1968<sup>1</sup>

1962				1963				1964				1965			
Date	DI	Spread ¢/lb.		Date	DI	Spread ¢/lb.		Date	DI	Spread ¢/lb.		Date	DI	Spread ¢/lb.	
Mar. 15	-0.981	0.060		Jan. 15	-0.397	0.140		Nov. 15	22.158	0.250		Nov. 30	-0.136	1.400	
Mar. 31	0.132	0.100		Jan. 31	0.791	0.250		Nov. 30	17.977	0.150		Dec. 15	-0.098	1.150	
Apr. 15	0.203	0.150		Feb. 15	1.626	0.030		Dec. 15	28.551	-0.050		Dec. 31	-0.144	1.260	
Apr. 30	0.252	0.100		Feb. 28	1.746	0.050		Dec. 31	20.947	-0.010		Jan. 15	-0.136	1.240	
May 15	0.242	-0.100		Mar. 15	1.020	0.050		Jan. 15	16.941	-0.080		Jan. 31	-0.224	2.000	
May 31	0.236	-0.130		Mar. 31	1.364	0.010		Jan. 31	12.677	-0.120		Feb. 15	-0.211	1.660	
June 15	-0.048	-0.160		Apr. 15	1.292	-0.050		Feb. 15	9.905	-0.190		Feb. 28	-0.220	1.770	
June 30	-0.216	-0.200		Apr. 30	1.682	0.010		Feb. 28	8.957	-0.230		Mar. 15	-0.204	1.530	
July 15	-0.226	-0.100		May 15	1.751	-0.010		Mar. 15	7.626	-0.130		Mar. 31	-0.191	1.440	
July 31	-0.098	-0.230		May 31	1.534	-0.080		Mar. 31	6.534	-0.150		Apr. 15	-0.222	1.460	
Aug. 15	10.694	-0.190		June 15	0.192	-0.070		Apr. 15	5.099	-0.100		Apr. 30	-0.192	1.100	
				June 30	0.087	-0.090		Apr. 30	4.098	-0.130		May 15	-0.218	0.920	
				July 15	0.211	-0.120		May 15	3.308	-0.130		May 31	-0.215	0.880	
				July 31	1.034	-0.010		May 31	2.680	-0.230		June 15	-0.214	0.750	
				Aug. 15	13.631	-0.090		June 15	1.720	-0.180		June 30	-0.216	0.850	
								June 30	0.789	-0.190		July 15	-0.235	0.820	
								July 15	0.886	-0.060		July 31	-0.201	0.640	
								July 31	2.590	-0.150		Aug. 15	-0.118	0.640	
								Aug. 15	9.924	0.060					

<sup>1</sup>

The August Soybean Oil contract did not exist before 1962, thus analysis for years prior to that was impossible.



Table 37

AUGUST OVER DECEMBER CHICAGO SOYBEAN OIL, 1962 - 1968\*

1962			1963			1964			1965		
Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.
Apr. 15	-0.814	0.110	Feb. 28	-1.060	0.060	Jan. 15	-0.848	-0.140	Jan. 15	-1.064	1.360
Apr. 30	-0.563	0.050	Mar. 15	-0.952	0.020	Jan. 31	0.636	-0.300	Jan. 31	-1.061	2.200
May 15	-0.078	-0.140	Mar. 31	-0.802	-0.050	Feb. 15	1.200	-0.340	Feb. 15	-1.003	1.840
May 31	0.093	-0.240	Apr. 15	-0.360	-0.150	Feb. 28	1.723	-0.390	Feb. 28	-0.949	2.000
June 15	-0.037	-0.290	Apr. 30	0.278	-0.050	Mar. 15	1.962	-0.280	Mar. 15	-0.986	1.810
June 30	-0.102	-0.400	May 15	0.235	-0.110	Mar. 31	2.401	-0.300	Mar. 31	-0.872	1.690
July 15	0.277	-0.240	May 31	0.560	-0.170	Apr. 15	2.914	-0.240	Apr. 15	-0.866	1.750
July 31	0.434	-0.350	June 15	-0.126	-0.180	Apr. 30	2.788	-0.230	Apr. 30	-0.743	1.310
Aug. 15	12.492	-0.300	June 30	-0.078	-0.240	May 15	2.287	-0.230	May 15	-0.722	1.070
			July 15	0.089	-0.260	May 31	1.976	-0.330	May 31	-0.695	1.070
			July 31	0.652	-0.110	June 15	1.012	-0.300	June 15	-0.709	0.850
			Aug. 15	6.305	-0.240	June 30	0.271	-0.350	June 30	-0.724	1.030
						July 15	0.350	-0.190	July 15	-0.775	1.090
						July 31	2.228	-0.260	July 31	-0.701	0.870
						Aug. 15	9.449	-0.010	Aug. 15	-0.128	0.870
1966			1967			1968					
Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.			
Jan. 15	-0.879	0.780	Jan. 31	-1.000	0.220	Jan. 15	-0.951	0.050			
Jan. 31	-0.857	0.520	Feb. 15	-0.886	0.240	Jan. 31	-0.892	0.050			
Feb. 15	-0.880	0.970	Feb. 28	-0.857	0.220	Feb. 15	-0.719	0.010			
Feb. 28	-0.786	0.420	Mar. 15	-0.758	0.330	Feb. 28	-0.685	0.060			
Mar. 15	-0.707	0.360	Mar. 31	-0.723	0.420	Mar. 15	-0.719	0.070			
Mar. 31	-0.625	0.410	Apr. 15	-0.743	0.330	Mar. 31	-0.697	0.110			
Apr. 15	-0.525	0.320	Apr. 30	-0.667	0.170	Apr. 15	-0.542	0.160			
Apr. 30	-0.406	0.540	May 15	-0.637	0.180	Apr. 30	-0.548	0.250			
May 15	-0.446	0.450	May 31	-0.577	0.100	May 15	-0.479	0.250			
May 31	-0.454	0.400	June 15	-0.589	0.070	May 31	-0.347	0.060			
June 15	-0.540	0.320	June 30	-0.616	-0.030	June 15	-0.380	-0.050			
June 30	-0.665	0.360	July 15	-0.537	-0.150	June 30	-0.409	-0.110			
July 15	-0.430	0.340	July 31	-0.032	-0.220	July 15	-0.236	-0.110			
July 31	0.008	0.500	Aug. 15	5.844	0.140	July 31	0.280	-0.050			
Aug. 15	1.545	1.460				Aug. 15	2.764	0.090			

\*

See Table 36.



Table 38

SEPTEMBER OVER OCTOBER CHICAGO SOYBEAN OIL, 1958 - 1968

1958				1959				1960				1961			
Date	DI	Spread	c/lb.	Date	DI	Spread	c/lb.	Date	DI	Spread	c/lb.	Date	DI	Spread	c/lb.
Jan. 15	-0.942	0.200		Jan. 31	-0.794	0.190		Jan. 31	-1.007	0.070		Jan. 15	-0.827	0.330	
Jan. 31	-0.791	0.140		Feb. 15	-0.684	0.140		Feb. 15	-0.977	0.020		Jan. 31	-0.709	0.420	
Feb. 15	-0.627	0.210		Feb. 28	-0.532	0.090		Feb. 28	-0.826	0.020		Feb. 15	-0.587	0.470	
Feb. 28	-0.620	0.010		Mar. 15	-0.593	0.100		Mar. 15	-0.711	0.000		Feb. 28	-0.584	0.750	
Mar. 15	-0.661	0.060		Mar. 31	-0.530	0.060		Mar. 31	-0.729	0.030		Mar. 15	-0.464	0.540	
Mar. 31	-0.680	0.120		Apr. 15	-0.360	0.170		Apr. 15	-0.660	0.070		Mar. 31	-0.287	0.500	
Apr. 15	-0.682	0.130		Apr. 30	-0.247	0.100		Apr. 30	-0.615	0.070		Apr. 15	-0.196	0.640	
Apr. 30	-0.723	0.120		May 15	-0.554	0.230		May 15	-0.644	0.060		Apr. 30	-0.110	0.580	
May 15	-0.719	0.200		May 31	-0.644	0.170		May 31	-0.640	0.100		May 15	-0.118	0.470	
May 31	-0.597	0.080		June 15	-0.635	0.240		June 15	-0.670	0.200		May 31	-0.148	0.570	
June 15	-0.559	-0.010		June 30	-0.738	0.220		June 30	-0.728	0.130		June 15	-0.163	0.210	
June 30	-0.523	-0.060		July 15	-0.720	0.060		July 15	-0.744	0.160		June 30	-0.375	0.100	
July 15	-0.589	0.000		July 31	-0.705	0.150		July 31	-0.705	0.210		July 15	-0.445	0.080	
July 31	-0.575	0.040		Aug. 15	-0.640	0.210		Aug. 15	-0.561	0.250		July 31	-0.469	0.340	
Aug. 15	-0.359	0.090		Aug. 31	-0.160	0.310		Aug. 31	-0.406	0.210		Aug. 15	-0.210	0.200	
Aug. 31	0.097	0.090		Sept. 15	1.105	0.160		Sept. 15	-0.050	0.100		Aug. 31	0.190	0.000	
Sept. 15	1.129	0.140										Sept. 15	2.685	-0.050	

1962				1963				1964				1965			
Date	DI	Spread	c/lb.	Date	DI	Spread	c/lb.	Date	DI	Spread	c/lb.	Date	DI	Spread	c/lb.
Mar. 15	-1.008	0.040		Jan. 15	-0.530	0.110		Nov. 15	4.042	-0.200		Nov. 15	-0.841	0.310	
Mar. 31	-0.896	0.070		Jan. 31	-0.127	0.080		Nov. 30	3.223	0.000		Nov. 30	-0.703	0.520	
Apr. 15	-0.764	0.070		Feb. 15	-0.054	0.010		Dec. 15	2.889	-0.050		Dec. 15	-0.712	0.400	
Apr. 30	-0.721	0.030		Feb. 28	-0.048	-0.010		Dec. 31	3.476	-0.060		Dec. 31	-0.469	0.470	
May 15	-0.715	-0.040		Mar. 15	-0.016	0.000		Jan. 15	3.281	-0.100		Jan. 15	-0.265	0.530	
May 31	-0.625	-0.070		Mar. 31	0.187	-0.010		Jan. 31	3.949	-0.120		Jan. 31	-0.341	0.930	
June 15	-0.621	-0.060		Apr. 15	0.282	-0.030		Feb. 15	3.789	-0.170		Feb. 15	-0.181	0.810	
June 30	-0.694	-0.090		Apr. 30	0.099	0.000		Feb. 28	3.790	-0.170		Feb. 28	-0.200	0.770	
July 15	-0.815	0.000		May 15	0.134	0.010		Mar. 15	2.970	-0.130		Mar. 15	-0.235	0.720	
July 31	-0.792	-0.090		May 31	0.108	-0.040		Mar. 31	2.499	-0.130		Mar. 31	-0.241	0.580	
Aug. 15	-0.630	-0.100		June 15	-0.010	-0.050		Apr. 15	2.311	-0.100		Apr. 15	-0.279	0.590	
Aug. 31	0.520	-0.100		June 30	-0.599	-0.040		Apr. 30	1.992	-0.100		Apr. 30	-0.374	0.520	
Sept. 15	5.420	-0.060		July 15	-0.774	-0.050		May 15	1.654	-0.090		May 15	-0.332	0.390	
				July 31	-0.809	0.030		May 31	1.473	-0.160		May 31	-0.263	0.300	
				Aug. 15	-0.527	-0.060		June 15	1.719	-0.130		June 15	-0.151	0.300	
				Aug. 31	0.256	-0.120		June 30	1.242	-0.120		June 30	-0.141	0.370	
				Sept. 15	37.417	-0.110		July 15	0.967	-0.050		July 15	-0.155	0.400	
								July 31	0.816	-0.090		July 31	-0.056	0.320	
								Aug. 15	1.342	0.000		Aug. 15	-0.095	0.270	
								Aug. 31	1.132	-0.090		Aug. 31	0.139	0.660	
								Sept. 15	7.875	-0.180		Sept. 15	1.243	0.790	

1966				1967				1968			
Date	DI	Spread	c/lb.	Date	DI	Spread	c/lb.	Date	DI	Spread	c/lb.
Nov. 15	-0.874	0.180		Nov. 15	-0.748	0.230		Jan. 15	-0.987	0.020	
Nov. 30	-0.880	0.190		Nov. 30	-0.706	0.200		Jan. 31	-0.888	0.060	
Dec. 15	-0.694	0.220		Dec. 15	-0.054	0.130		Feb. 15	-0.898	0.100	
Dec. 31	-0.678	0.180		Dec. 31	-0.213	0.070		Feb. 28	-0.774	0.080	
Jan. 15	-0.643	0.380		Jan. 15	0.468	0.120		Mar. 15	-0.654	0.100	
Jan. 31	-0.586	0.210		Jan. 31	0.461	0.140		Mar. 31	-0.440	0.130	
Feb. 15	-0.493	0.460		Feb. 15	0.153	0.080		Apr. 15	-0.194	0.140	
Feb. 28	-0.313	0.140		Feb. 28	-0.125	0.060		Apr. 30	-0.005	0.120	
Mar. 15	-0.182	0.210		Mar. 15	-0.104	0.100		May 15	0.150	0.170	
Mar. 31	0.019	0.200		Mar. 31	0.022	0.160		May 31	0.124	0.090	
Apr. 15	0.163	0.190		Apr. 15	-0.080	0.160		June 15	-0.290	0.020	
Apr. 30	0.217	0.270		Apr. 30	-0.303	0.100		June 30	-0.279	0.000	
May 15	0.132	0.190		May 15	-0.267	0.110		July 15	-0.121	0.000	
May 31	0.156	0.180		May 31	-0.374	0.110		July 31	0.246	0.060	
June 15	-0.060	0.210		June 15	-0.444	0.070		Aug. 15	0.006	0.040	
June 30	-0.376	0.210		June 30	-0.439	0.020		Aug. 31	0.344	0.190	
July 15	-0.330	0.140		July 15	-0.365	-0.040		Sept. 15	1.426	0.050	
July 31	-0.390	0.250		July 31	-0.359	-0.060					
Aug. 15	-0.300	0.610		Aug. 15	-0.259	0.070					
Aug. 31	-0.239	0.490		Aug. 31	-0.062	0.110					
Sept. 15	0.590	0.460		Sept. 15	2.135	-0.030					





Table 39

OCTOBER OVER DECEMBER CHICAGO SOYBEAN OIL, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.
Feb. 15	-0.973	0.010	Feb. 15	-0.756	0.010	Mar. 31	-0.873	0.000	Feb. 15	-0.914	0.230
Feb. 28	-0.882	0.020	Feb. 28	-0.364	0.000	Apr. 15	-0.699	-0.030	Feb. 28	-0.802	0.240
Mar. 15	-0.707	-0.020	Mar. 15	-0.227	0.040	Apr. 30	-0.480	-0.060	Mar. 15	-0.747	0.050
Mar. 31	-0.440	-0.030	Mar. 31	-0.117	0.030	May 15	-0.197	-0.030	Mar. 31	-0.684	0.120
Apr. 15	-0.192	-0.020	Apr. 15	0.326	0.020	May 31	-0.127	0.010	Apr. 15	-0.620	0.140
Apr. 30	-0.106	-0.010	Apr. 30	0.361	0.070	June 15	-0.184	0.070	Apr. 30	-0.570	0.090
May 15	-0.222	0.010	May 15	0.698	0.050	June 30	0.034	0.130	May 15	-0.555	0.100
May 31	-0.378	0.000	May 31	0.997	0.030	July 15	0.153	0.100	May 31	-0.512	0.120
June 15	-0.014	0.010	June 15	0.972	0.070	July 31	0.366	0.130	June 15	-0.448	0.090
June 30	0.013	-0.010	June 30	1.107	0.070	Aug. 15	0.592	0.200	June 30	-0.346	0.000
July 15	0.114	0.000	July 15	1.085	0.020	Aug. 31	0.183	0.110	July 15	-0.338	-0.060
July 31	0.135	0.000	July 31	0.891	0.050	Sept. 15	0.171	0.100	July 31	-0.158	-0.080
Aug. 15	0.076	0.020	Aug. 15	0.889	0.110	Sept. 30	0.696	0.100	Aug. 15	-0.159	-0.040
Aug. 31	0.291	0.000	Aug. 31	0.795	0.200	Oct. 15	2.257	0.140	Aug. 31	0.103	-0.100
Sept. 15	0.169	0.060	Sept. 15	0.739	0.130				Sept. 15	0.240	-0.170
Sept. 30	0.726	0.080	Sept. 30	1.044	0.040				Sept. 30	0.629	-0.130
Oct. 15	1.615	0.380	Oct. 15	2.733	0.080				Oct. 15	3.873	-0.140

1962			1963			1964			1965		
Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.
Apr. 15	-0.800	-0.040	Feb. 28	-1.033	0.010	Jan. 15	-1.016	-0.060	Jan. 15	-0.990	0.120
Apr. 30	-0.591	-0.050	Mar. 15	-0.971	-0.030	Jan. 31	-0.877	-0.180	Jan. 31	-0.931	0.200
May 15	-0.164	-0.040	Mar. 31	-0.908	-0.060	Feb. 15	-0.787	-0.150	Feb. 15	-0.908	0.180
May 31	-0.005	-0.110	Apr. 15	-0.689	-0.100	Feb. 28	-0.705	-0.160	Feb. 28	-0.880	0.230
June 15	0.140	-0.130	Apr. 30	-0.471	-0.060	Mar. 15	-0.625	-0.150	Mar. 15	-0.885	0.280
June 30	0.287	-0.200	May 15	-0.500	-0.100	Mar. 31	-0.503	-0.150	Mar. 31	-0.801	0.250
July 15	0.844	-0.140	May 31	-0.314	-0.090	Apr. 15	-0.288	-0.140	Apr. 15	-0.694	0.290
July 31	0.792	-0.120	June 15	-0.172	-0.110	Apr. 30	-0.176	-0.100	Apr. 31	-0.600	0.210
Aug. 15	0.288	-0.110	June 30	-0.043	-0.150	May 15	-0.153	-0.100	May 15	-0.523	0.150
Aug. 31	-0.106	-0.190	July 15	0.013	-0.140	May 31	-0.101	-0.100	May 31	-0.403	0.190
Sept. 15	-0.082	-0.200	July 31	-0.090	-0.100	June 15	-0.176	-0.120	June 15	-0.383	0.100
Sept. 30	1.432	-0.200	Aug. 15	-0.449	-0.150	June 30	-0.204	-0.160	June 30	-0.292	0.180
Oct. 15	23.506	-0.160	Aug. 31	-0.498	-0.180	July 15	-0.197	-0.130	July 15	-0.299	0.270
			Sept. 15	-0.679	-0.190	July 31	0.003	-0.110	July 31	-0.364	0.230
			Sept. 30	-0.117	-0.140	Aug. 15	0.061	-0.070	Aug. 15	-0.354	0.230
			Oct. 15	22.582	-0.250	Aug. 31	0.260	-0.080	Aug. 31	-0.410	0.400
						Sept. 15	0.578	-0.020	Sept. 15	-0.287	0.400
						Sept. 30	1.276	0.060	Sept. 30	-0.222	0.980
						Oct. 15	4.631	0.210	Oct. 15	1.307	1.120

1966			1967			1968		
Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.	Date	DI	Spread ¢/lb.
Jan. 15	-0.321	0.170	Jan. 31	-0.874	0.030	Jan. 15	3.407	0.020
Jan. 31	-0.283	0.140	Feb. 15	-0.543	0.090	Jan. 31	0.425	-0.010
Feb. 15	-0.155	0.190	Feb. 28	-0.415	0.070	Feb. 15	1.982	-0.050
Feb. 28	-0.277	0.190	Mar. 15	-0.201	0.110	Feb. 28	1.025	0.000
Mar. 15	-0.312	0.060	Mar. 31	-0.171	0.110	Mar. 15	0.483	-0.030
Mar. 31	-0.319	0.110	Apr. 15	-0.231	0.090	Mar. 31	0.105	-0.020
Apr. 15	-0.269	0.060	Apr. 30	-0.103	0.050	Apr. 15	0.223	0.010
Apr. 30	-0.139	0.150	May 15	-0.117	0.070	Apr. 30	0.257	0.050
May 15	-0.159	0.160	May 31	0.132	-0.010	May 15	0.314	-0.020
May 31	-0.081	0.160	June 15	0.235	0.010	May 31	0.438	-0.030
June 15	-0.057	0.150	June 30	0.235	-0.020	June 15	0.678	-0.090
June 30	-0.194	0.130	July 15	0.095	-0.030	June 30	0.428	-0.090
July 15	-0.038	0.180	July 31	0.017	-0.070	July 15	0.467	-0.090
July 31	-0.035	0.230	Aug. 15	-0.098	0.070	July 31	0.519	-0.060
Aug. 15	0.015	0.400	Aug. 31	-0.014	0.120	Aug. 15	0.493	-0.020
Aug. 31	-0.103	0.400	Sept. 15	0.063	-0.030	Aug. 31	0.718	0.000
Sept. 15	-0.007	0.160	Sept. 30	0.525	-0.070	Sept. 15	0.640	-0.070
Sept. 30	0.676	0.060	Oct. 15	4.841	-0.100	Sept. 30	1.297	0.000
Oct. 15	4.379	-0.030				Oct. 15	10.642	-0.060



Table 40

DECEMBER OVER JANUARY CHICAGO SOYBEAN OIL, 1958 - 1967<sup>1</sup>

1958				1959				1960				1961			
Date	DI	Spread ¢/lb.		Date	DI	Spread ¢/lb.		Date	DI	Spread ¢/lb.		Date	DI	Spread ¢/lb.	
May 31	-0.954	-0.030		Mar. 31	-0.983	-0.060		Apr. 15	-0.932	0.010		May 31	-1.008	0.020	
June 15	-0.597	-0.050		Apr. 15	-0.883	0.020		Apr. 30	-0.926	-0.030		June 15	-0.805	-0.040	
June 30	-0.614	-0.030		Apr. 30	-0.790	0.000		May 15	-0.933	-0.040		June 30	-0.483	0.000	
July 15	-0.656	-0.020		May 15	-0.716	0.010		May 31	-0.888	0.000		July 15	-0.288	-0.090	
July 31	-0.656	0.000		May 31	-0.724	0.000		June 15	-0.745	-0.020		July 31	-0.383	-0.070	
Aug. 15	-0.680	0.000		June 15	-0.686	0.020		June 30	-0.782	0.000		Aug. 15	-0.286	-0.090	
Aug. 31	-0.750	0.010		June 30	-0.642	-0.010		July 15	-0.757	-0.020		Aug. 31	-0.384	-0.080	
Sept. 15	-0.750	0.000		July 15	-0.703	-0.010		July 31	-0.832	-0.010		Sept. 15	-0.072	-0.110	
Sept. 30	-0.773	0.000		July 31	-0.675	0.000		Aug. 15	-0.831	-0.010		Sept. 30	-0.016	-0.080	
Oct. 15	-0.771	0.070		Aug. 15	-0.675	0.030		Aug. 31	-0.794	-0.010		Oct. 15	0.013	-0.080	
Oct. 31	-0.758	0.110		Aug. 31	-0.706	0.040		Sept. 15	-0.748	0.000		Oct. 31	0.616	-0.050	
Nov. 15	-0.458	0.220		Sept. 15	-0.708	0.000		Sept. 30	-0.690	0.060		Nov. 15	1.030	-0.070	
Nov. 30	0.017	0.210		Sept. 30	-0.673	0.010		Oct. 15	-0.713	0.080		Nov. 30	2.151	-0.090	
Dec. 15	2.358	0.180		Oct. 15	-0.555	0.000		Oct. 31	-0.606	0.050		Dec. 15	10.021	-0.070	
				Oct. 31	-0.460	-0.040		Nov. 15	-0.273	0.120					
				Nov. 15	-0.213	-0.080		Nov. 30	-0.102	0.110					
				Nov. 30	0.240	0.140		Dec. 15	0.806	0.240					
				Dec. 15	8.391	-0.050									
1962				1963				1964				1965			
Date	DI	Spread ¢/lb.		Date	DI	Spread ¢/lb.		Date	DI	Spread ¢/lb.		Date	DI	Spread ¢/lb.	
June 15	-0.612	-0.050		Mar. 15	-0.919	-0.030		Apr. 15	-0.636	-0.060		Feb. 15	-0.440	0.030	
June 30	-0.568	-0.080		Mar. 31	-0.824	0.000		Apr. 30	-0.588	-0.040		Feb. 28	-0.363	0.020	
July 15	-0.714	-0.080		Apr. 15	-0.622	-0.030		May 15	-0.468	-0.030		Mar. 15	-0.381	0.050	
July 31	-0.571	-0.070		Apr. 30	-0.070	-0.040		May 31	-0.459	-0.050		Mar. 31	-0.393	0.030	
Aug. 15	-0.507	-0.070		May 15	0.201	-0.060		June 15	-0.482	-0.040		Apr. 15	-0.410	0.040	
Aug. 31	-0.400	-0.090		May 31	0.321	-0.050		June 30	-0.436	-0.080		Apr. 30	-0.384	0.050	
Sept. 15	-0.446	-0.100		June 15	0.308	-0.080		July 15	-0.472	-0.070		May 15	-0.443	0.000	
Sept. 30	-0.560	-0.110		June 30	0.533	-0.070		July 31	-0.452	-0.050		May 31	-0.519	-0.010	
Oct. 15	-0.506	-0.060		July 15	0.596	-0.090		Aug. 15	-0.430	-0.030		June 15	-0.602	0.010	
Oct. 31	-0.529	-0.040		July 31	0.669	-0.070		Aug. 31	-0.338	-0.030		June 30	-0.624	0.000	
Nov. 15	-0.348	-0.080		Aug. 15	0.773	-0.110		Sept. 15	-0.355	-0.060		July 15	-0.635	0.010	
Nov. 30	0.675	-0.090		Aug. 31	0.055	-0.100		Sept. 30	-0.354	0.040		July 31	-0.588	0.010	
Dec. 15	14.824	-0.080		Sept. 15	0.618	-0.090		Oct. 15	-0.352	0.130		Aug. 15	-0.596	0.010	
				Sept. 31	0.724	-0.060		Oct. 31	-0.216	0.140		Aug. 31	-0.609	0.060	
				Oct. 15	-0.052	-0.050		Nov. 15	0.224	0.150		Sept. 15	-0.568	0.050	
				Oct. 30	0.156	-0.100		Nov. 30	0.583	0.330		Sept. 30	-0.640	0.140	
				Nov. 15	0.939	-0.110		Dec. 15	3.436	0.250		Oct. 15	-0.642	0.240	
				Nov. 31	1.837	-0.170						Oct. 31	-0.636	0.140	
				Dec. 15	50.283	-0.090						Nov. 15	-0.297	0.290	
											Nov. 30	0.073	0.300		
											Dec. 15	1.399	0.410		
1966				1967											
Date	DI	Spread ¢/lb.		Date	DI	Spread ¢/lb.									
Feb. 15	-0.619	0.080		Feb. 15	-0.768	0.000									
Feb. 28	-0.356	0.080		Feb. 28	-0.622	0.030									
Mar. 15	-0.260	0.040		Mar. 15	-0.319	0.000									
Mar. 31	-0.248	0.050		Mar. 31	-0.359	0.010									
Apr. 15	-0.084	0.090		Apr. 15	-0.147	0.010									
Apr. 30	-0.001	0.110		Apr. 30	-0.161	0.000									
May 15	0.069	0.070		May 15	-0.080	0.000									
May 31	0.017	0.050		May 31	-0.213	0.010									
June 15	-0.036	0.030		June 15	-0.200	0.000									
June 30	-0.072	0.070		June 30	-0.185	0.000									
July 15	-0.278	0.050		July 15	-0.054	-0.020									
July 31	-0.315	0.020		July 31	-0.084	-0.030									
Aug. 15	-0.524	0.120		Aug. 15	-0.226	0.010									
Aug. 31	-0.553	0.120		Aug. 31	-0.304	-0.050									
Sept. 15	-0.529	0.060		Sept. 15	-0.351	-0.030									
Sept. 30	-0.413	-0.020		Sept. 30	-0.287	-0.060									
Oct. 15	-0.325	-0.020		Oct. 15	-0.175	-0.090									
Oct. 31	-0.236	0.060		Oct. 31	-0.060	-0.070									
Nov. 15	-0.073	0.090		Nov. 15	0.094	-0.080									
Nov. 30	0.591	0.050		Nov. 30	0.333	-0.050									
Dec. 15	4.426	0.090		Dec. 15	3.499	-0.060									

<sup>1</sup> This spread compares months traded in different calendar years; e.g., December 1958 over January 1959. The labels given for each spread refer to the calendar year in which December trades, thus the spread labeled 1958 compares December 1958 with January 1959. Also since data for 1969 were not available, only 10 spreads could be considered.



Table 41

JANUARY OVER MARCH CHICAGO SOYBEAN MEAL, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread \$/ton	Date	DI	Spread \$/ton	Date	DI	Spread \$/ton	Date	DI	Spread \$/ton
June 15	-0.947	-0.100	July 15	-0.284	0.050	May 31	-0.799	-0.050	May 31	3.914	-1.000
June 30	-0.588	-0.150	July 31	0.035	-0.650	June 15	-0.547	-0.150	June 15	16.803	-1.050
July 15	0.180	-1.400	Aug. 15	0.017	-0.900	June 30	-0.458	-0.300	June 30	1.245	-1.350
July 31	-0.144	-0.800	Aug. 31	0.098	-0.700	July 15	-0.140	-0.350	July 15	1.097	-1.050
Aug. 15	-0.309	-0.700	Sept. 15	0.623	-0.900	July 31	-0.015	-0.650	July 31	2.387	-1.050
Aug. 31	-0.256	-0.950	Sept. 30	0.693	-0.950	Aug. 15	0.154	-0.600	Aug. 15	2.994	-0.850
Sept. 15	-0.066	-1.250	Oct. 15	0.642	-1.150	Aug. 31	0.340	-3.850	Aug. 31	3.249	-0.800
Sept. 30	-0.238	-0.500	Oct. 31	0.717	-0.900	Sept. 15	0.380	-1.050	Sept. 15	1.711	-0.850
Oct. 15	-0.175	-0.550	Nov. 15	0.270	0.300	Sept. 30	0.516	-0.550	Sept. 30	0.752	-1.200
Oct. 31	-0.137	-0.200	Nov. 30	0.206	0.900	Oct. 15	0.400	-0.500	Oct. 15	0.579	-1.500
Nov. 15	-0.162	-0.200	Dec. 15	0.491	2.250	Oct. 31	0.209	-0.200	Oct. 31	0.673	-1.300
Nov. 30	-0.029	-0.550	Dec. 31	0.773	3.150	Nov. 15	0.214	-0.100	Nov. 15	0.424	-2.050
Dec. 15	0.423	-0.750	Jan. 15	2.537	4.800	Nov. 30	0.149	-0.200	Nov. 30	0.270	-2.100
Dec. 31	1.448	-0.450				Dec. 15	0.084	0.750	Dec. 15	0.423	-1.100
Jan. 15	22.609	1.050				Dec. 31	0.360	1.100	Dec. 31	0.983	-1.800
						Jan. 15	1.900	3.200	Jan. 15	15.251	-1.900

1962			1963			1964			1965		
Date	DI	Spread \$/ton	Date	DI	Spread \$/ton	Date	DI	Spread \$/ton	Date	DI	Spread \$/ton
Aug. 15	-0.886	-1.350	July 15	-0.832	-0.650	Apr. 30	-0.967	-0.100	Apr. 15	-0.552	-0.300
Aug. 31	-0.578	-1.300	July 31	-0.814	-0.700	May 15	-0.722	-0.450	Apr. 30	-0.414	-0.400
Sept. 15	-0.547	-1.400	Aug. 15	-0.721	-0.350	May 31	-0.661	-0.100	May 15	-0.355	-0.500
Sept. 30	-0.558	-1.850	Aug. 31	-0.650	-0.350	June 15	-0.519	-0.300	May 31	-0.438	-0.600
Oct. 15	-0.488	-1.100	Sept. 15	-0.628	-0.650	June 30	-0.595	-0.400	June 15	-0.490	-0.400
Oct. 31	-0.435	-0.500	Sept. 30	-0.604	-0.600	July 15	-0.629	-0.450	June 30	-0.412	-0.400
Nov. 15	-0.383	-0.300	Oct. 15	-0.649	-0.250	July 31	-0.555	-0.400	July 15	-0.398	-0.350
Nov. 30	-0.240	0.250	Oct. 31	-0.636	0.300	Aug. 15	-0.507	-0.100	July 31	-0.450	-0.600
Dec. 15	-0.107	1.500	Nov. 15	-0.599	0.400	Aug. 31	-0.395	0.100	Aug. 15	-0.306	-0.700
Dec. 31	0.107	2.450	Nov. 30	-0.428	0.950	Sept. 15	-0.322	0.000	Aug. 31	-0.421	-0.450
Jan. 15	1.573	0.300	Dec. 15	-0.249	0.750	Sept. 30	-0.372	-0.950	Sept. 15	-0.424	-0.300
			Dec. 31	0.023	1.250	Oct. 15	-0.329	-0.600	Sept. 30	-0.370	-0.200
			Jan. 15	0.916	0.950	Oct. 31	-0.165	-0.250	Oct. 15	-0.427	-1.000
						Nov. 15	-0.222	-0.700	Oct. 31	-0.505	-0.600
						Nov. 30	-0.241	-0.850	Nov. 15	-0.418	-1.000
						Dec. 15	-0.187	-1.150	Nov. 30	-0.246	-0.950
						Dec. 31	0.614	-2.000	Dec. 15	-0.035	-1.000
						Jan. 15	14.137	-1.700	Dec. 31	0.761	-2.100
									Jan. 15	14.914	-1.650

1966			1967			1968		
Date	DI	Spread \$/ton	Date	DI	Spread \$/ton	Date	DI	Spread \$/ton
Apr. 15	-0.929	-0.750	Apr. 15	-0.893	-0.500	Apr. 15	-0.773	-0.250
Apr. 30	-0.933	-0.950	Apr. 30	-0.642	-0.050	Apr. 30	-0.450	-0.250
May 15	-0.812	-1.000	May 15	-0.425	-0.200	May 15	-0.350	-0.400
May 31	-0.756	-0.850	May 31	-0.226	-0.150	May 31	-0.366	-0.200
June 15	-0.718	-0.800	June 15	0.353	0.700	June 15	-0.258	-0.400
June 30	-0.649	-0.800	June 30	0.539	-0.300	June 30	-0.281	-0.350
July 15	-0.566	-0.500	July 15	0.570	0.000	July 15	-0.302	-0.500
July 31	-0.393	-0.550	July 31	0.651	-0.200	July 31	-0.200	-0.550
Aug. 15	-0.353	-0.950	Aug. 15	0.587	0.150	Aug. 15	-0.293	-0.400
Aug. 31	-0.274	-0.800	Aug. 31	0.411	-0.150	Aug. 31	-0.069	-0.100
Sept. 15	-0.207	-0.950	Sept. 15	0.464	-0.400	Sept. 15	-0.149	-0.200
Sept. 30	-0.182	-0.700	Sept. 30	0.297	0.000	Sept. 30	-0.256	-0.350
Oct. 15	0.017	-0.400	Oct. 15	0.135	-0.300	Oct. 15	-0.316	-0.400
Oct. 31	0.277	0.400	Oct. 31	0.239	-0.100	Oct. 31	-0.347	-0.850
Nov. 15	0.289	0.700	Nov. 15	0.276	0.200	Nov. 15	-0.320	-0.750
Nov. 30	0.286	0.300	Nov. 30	0.196	0.200	Nov. 30	-0.225	-0.900
Dec. 15	0.288	0.300	Dec. 15	0.189	1.850	Dec. 15	-0.056	-1.050
Dec. 31	0.495	0.300	Dec. 31	0.392	2.900	Dec. 31	0.495	-1.450
Jan. 15	2.142	3.600	Jan. 15	1.397	2.400	Jan. 15	5.837	-1.000



Table 42

JANUARY OVER MAY CHICAGO SOYBEAN MEAL, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread \$/ton	Date	DI	Spread \$/ton	Date	DI	Spread \$/ton	Date	DI	Spread \$/ton
July 31	-0.958	-0.950	July 31	-0.459	-0.950	July 15	-0.766	-1.350	Aug. 31	-0.885	0.950
Aug. 15	-0.561	-1.350	Sept. 15	1.133	-0.900	July 31	-0.660	-1.400	Sept. 15	-0.594	0.300
Aug. 31	-0.484	-1.400	Sept. 30	1.043	-1.200	Sept. 15	-0.411	-1.750	Sept. 30	-0.560	0.500
Sept. 15	-0.377	-1.850	Oct. 15	0.791	-1.800	Sept. 30	-0.185	-0.900	Oct. 15	-0.360	0.050
Sept. 30	-0.348	-1.150	Oct. 31	0.650	-1.400	Oct. 15	-0.274	-0.700	Oct. 31	0.149	0.100
Oct. 15	-0.074	-0.900	Nov. 15	-0.111	0.400	Oct. 31	-0.369	-0.200	Nov. 15	0.093	-0.750
Oct. 31	-0.086	-0.650	Nov. 30	-0.125	1.100	Nov. 15	-0.273	-0.450	Nov. 30	0.068	-1.800
Nov. 15	-0.111	-0.500	Dec. 15	0.175	3.500	Nov. 30	-0.339	-0.450	Dec. 15	0.283	-0.200
Nov. 30	0.152	-0.800	Dec. 31	0.403	4.250	Dec. 15	-0.420	0.800	Dec. 31	0.842	-1.250
Dec. 15	0.550	-0.950	Jan. 15	1.820	7.000	Dec. 31	-0.349	2.100	Jan. 15	16.809	-1.700
Dec. 31	1.582	-1.200				Jan. 15	0.385	4.300			
Jan. 15	27.285	-1.700									

1962			1963			1964			1965		
Date	DI	Spread \$/ton	Date	DI	Spread \$/ton	Date	DI	Spread \$/ton	Date	DI	Spread \$/ton
Sept. 15	-0.886	-3.200	July 31	-0.974	-1.100	June 15	-0.779	-0.550	July 15	-0.983	-0.650
Sept. 30	-0.767	-3.100	Aug. 15	-0.865	-0.700	June 30	-0.842	-0.600	July 31	-0.955	-0.800
Oct. 15	-0.659	-1.750	Aug. 31	-0.780	-0.550	July 15	-0.827	-0.950	Aug. 15	-0.814	-1.200
Oct. 31	-0.637	-1.150	Sept. 15	-0.723	-0.850	July 31	-0.799	-0.700	Aug. 31	-0.797	-0.800
Nov. 15	-0.616	-1.250	Sept. 30	-0.706	-0.600	Aug. 15	-0.668	-0.250	Sept. 15	-0.747	-0.500
Nov. 30	-0.603	-0.250	Oct. 15	-0.704	-0.350	Aug. 31	-0.501	0.200	Sept. 30	-0.571	-0.500
Dec. 15	-0.549	1.500	Oct. 31	-0.718	0.400	Sept. 15	-0.417	0.100	Oct. 15	-0.546	-1.300
Dec. 31	-0.444	2.650	Nov. 15	-0.728	0.750	Sept. 30	-0.499	-1.000	Oct. 31	-0.555	-1.200
Jan. 15	0.213	-0.100	Nov. 30	-0.677	1.600	Oct. 15	-0.499	-0.650	Nov. 15	-0.516	-2.100
			Dec. 15	-0.696	0.900	Oct. 31	-0.519	-0.400	Nov. 30	-0.419	-1.750
			Dec. 31	-0.571	1.600	Nov. 15	-0.492	-1.000	Dec. 15	-0.204	-2.050
			Jan. 15	-0.030	1.450	Nov. 30	-0.452	-1.350	Dec. 31	0.355	-4.000
						Dec. 15	-0.509	-1.300	Jan. 15	9.596	-3.550
						Dec. 31	-0.072	-3.450			
						Jan. ' 15	7.891	-2.700			

1966			1967			1968		
Date	DI	Spread \$/ton	Date	DI	Spread \$/ton	Date	DI	Spread \$/ton
June 30	-0.973	-1.550	June 15	-0.407	0.700	June 15	-0.935	-0.750
July 15	-0.944	-1.500	June 30	0.122	0.100	June 30	-0.856	-0.700
July 31	-0.865	-1.400	July 15	0.454	0.050	July 15	-0.827	-1.150
Aug. 15	-0.771	-1.900	July 31	0.794	-0.700	July 31	-0.746	-1.000
Aug. 31	-0.576	-1.650	Aug. 15	0.487	0.200	Aug. 15	-0.806	-0.950
Sept. 15	-0.539	-1.850	Aug. 31	0.416	0.000	Aug. 31	-0.716	-0.450
Sept. 30	-0.546	-1.450	Sept. 15	0.351	-1.000	Sept. 15	-0.693	-0.550
Oct. 15	-0.260	-1.000	Sept. 30	0.204	-0.550	Sept. 30	-0.526	-0.850
Oct. 31	-0.143	-0.100	Oct. 15	-0.117	-0.250	Oct. 15	-0.410	-0.950
Nov. 15	-0.058	0.050	Oct. 31	-0.029	-0.550	Oct. 31	-0.299	-1.750
Nov. 30	-0.061	-0.550	Nov. 15	-0.128	-0.150	Nov. 15	-0.253	-1.500
Dec. 15	0.081	-0.050	Nov. 30	-0.163	0.100	Nov. 30	-0.232	-1.750
Dec. 31	0.448	-0.300	Dec. 15	-0.286	1.700	Dec. 15	-0.082	-1.700
Jan. 15	2.648	4.600	Dec. 31	-0.181	3.800	Dec. 31	0.322	-2.550
			Jan. 15	0.447	3.000	Jan. 15	5.802	-1.700





Table 43

JANUARY OVER JULY CHICAGO SOYBEAN MEAL, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread \$/ton	Date	DI	Spread \$/ton	Date	DI	Spread \$/ton	Date	DI	Spread \$/ton
Sept. 30	-0.914	-1.650	Sept. 30	-0.846	-1.300	Sept. 30	-0.803	-1.050	Sept. 30	-0.987	0.150
Oct. 15	-0.871	-1.000	Oct. 15	-0.659	-2.000	Oct. 15	-0.644	-0.750	Oct. 15	-0.910	-0.600
Oct. 31	-0.779	-1.050	Oct. 31	-0.394	-1.600	Oct. 31	-0.648	-0.150	Oct. 31	-0.746	-0.650
Nov. 15	-0.727	-0.550	Nov. 15	-0.602	0.400	Nov. 15	-0.565	-0.450	Nov. 15	-0.346	-1.800
Nov. 30	-0.619	-1.050	Nov. 30	-0.554	1.100	Nov. 30	-0.562	-0.450	Nov. 30	-0.249	-2.900
Dec. 15	-0.363	-1.000	Dec. 15	-0.506	3.750	Dec. 15	-0.576	0.900	Dec. 15	-0.155	-1.100
Dec. 31	0.107	-1.300	Dec. 31	-0.313	4.450	Dec. 31	-0.493	2.500	Dec. 31	0.304	-2.250
Jan. 15	9.480	-1.850	Jan. 15	0.760	7.900	Jan. 15	0.175	4.950	Jan. 15	13.288	-2.900

1962			1963			1964			1965		
Date	DI	Spread \$/ton	Date	DI	Spread \$/ton	Date	DI	Spread \$/ton	Date	DI	Spread \$/ton
Sept. 30	-0.912	-4.100	Aug. 31	-0.977	-1.100	Aug. 15	-0.977	-0.450	Aug. 31	-0.955	-1.200
Oct. 15	-0.876	-2.650	Sept. 15	-0.937	-1.200	Aug. 31	-0.966	0.400	Sept. 15	-0.926	-0.800
Oct. 31	-0.840	-1.550	Sept. 30	-0.920	-0.750	Sept. 15	-0.910	0.400	Sept. 30	-0.871	-1.100
Nov. 15	-0.766	-1.800	Oct. 15	-0.889	-0.800	Sept. 30	-0.915	-0.750	Oct. 15	-0.816	-1.400
Nov. 30	-0.769	-0.700	Oct. 31	-0.838	0.350	Oct. 15	-0.873	-0.700	Oct. 31	-0.788	-1.500
Dec. 15	-0.759	1.300	Nov. 15	-0.843	1.000	Oct. 31	-0.707	-0.450	Nov. 15	-0.725	-2.200
Dec. 31	-0.674	2.550	Nov. 30	-0.799	1.700	Nov. 15	-0.698	-1.300	Nov. 30	-0.672	-2.650
Jan. 15	-0.053	-0.650	Dec. 15	-0.801	0.900	Nov. 30	-0.668	-1.500	Dec. 15	-0.439	-2.600
			Dec. 31	-0.751	1.850	Dec. 15	-0.692	-1.350	Dec. 31	0.454	-4.850
			Jan. 15	-0.412	1.500	Dec. 31	-0.438	-3.600	Jan. 15	10.639	-4.550
						Jan. 15	3.344	-2.700			

1966			1967			1968		
Date	DI	Spread \$/ton	Date	DI	Spread \$/ton	Date	DI	Spread \$/ton
Aug. 15	-0.951	-2.900	Aug. 15	-0.924	0.050	Aug. 15	-0.979	-1.250
Aug. 31	-0.875	-2.450	Aug. 31	-0.708	0.000	Aug. 31	-0.955	-0.500
Sept. 15	-0.814	-2.700	Sept. 15	-0.584	-1.750	Sept. 15	-0.916	-0.800
Sept. 30	-0.737	-2.350	Sept. 30	-0.575	-0.800	Sept. 30	-0.640	-1.350
Oct. 15	-0.656	-1.800	Oct. 15	-0.640	-0.600	Sept. 15	-0.522	-1.300
Oct. 31	-0.496	-0.900	Oct. 31	-0.541	-0.950	Oct. 31	-0.478	-2.400
Nov. 15	-0.218	-0.500	Nov. 15	-0.416	-0.500	Nov. 15	-0.504	-1.950
Nov. 30	-0.131	-1.400	Nov. 30	-0.434	-0.100	Nov. 30	-0.520	-2.500
Dec. 15	0.069	-0.350	Dec. 15	-0.449	1.400	Dec. 15	-0.433	-2.550
Dec. 31	0.439	-1.000	Dec. 31	-0.331	3.800	Dec. 31	-0.164	-3.500
Jan. 15	2.098	4.550	Jan. 15	0.422	3.000	Jan. 15	3.171	-2.400



Table 44

MARCH OVER JULY CHICAGO SOYBEAN MEAL, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread \$/ton	Date	DI	Spread \$/ton	Date	DI	Spread \$/ton	Date	DI	Spread \$/ton
Sept. 30	-0.908	-1.150	Sept. 30	-0.916	-0.350	Sept. 30	-0.873	-0.500	Sept. 30	-1.017	1.350
Oct. 15	-0.859	-0.450	Oct. 15	-0.797	-0.850	Oct. 15	-0.749	-0.250	Oct. 15	-0.967	0.900
Oct. 31	-0.751	-0.850	Oct. 31	-0.648	-0.700	Oct. 31	-0.711	0.050	Oct. 31	-0.866	0.650
Nov. 15	-0.679	-0.350	Nov. 15	-0.684	0.100	Nov. 15	-0.641	-0.350	Nov. 15	-0.558	0.250
Nov. 30	-0.616	-0.500	Nov. 30	-0.622	0.200	Nov. 30	-0.620	-0.250	Nov. 30	-0.419	-0.800
Dec. 15	-0.557	-0.250	Dec. 15	-0.660	1.500	Dec. 15	-0.602	0.150	Dec. 15	-0.412	0.000
Dec. 31	-0.539	-0.850	Dec. 31	-0.603	1.300	Dec. 31	-0.625	1.400	Dec. 31	-0.344	-0.450
Jan. 15	-0.540	-0.800	Jan. 15	-0.531	3.100	Jan. 15	-0.604	1.750	Jan. 15	-0.104	-1.000
Jan. 31	-0.467	-0.150	Jan. 31	-0.530	2.300	Jan. 31	-0.614	2.000	Jan. 31	0.425	-1.700
Feb. 15	-0.241	0.850	Feb. 15	-0.253	0.000	Feb. 15	-0.504	0.350	Feb. 15	1.129	-0.800
Feb. 28	0.195	3.450	Feb. 28	0.364	-0.200	Feb. 28	-0.115	-0.900	Feb. 28	2.155	-1.550
Mar. 15	11.192	9.200	Mar. 15	1.817	-1.050	Mar. 15	3.148	-0.950	Mar. 15	14.317	-2.750

1962			1963			1964			1965		
Date	DI	Spread \$/ton	Date	DI	Spread \$/ton	Date	DI	Spread \$/ton	Date	DI	Spread \$/ton
Sept. 30	-0.930	-2.250	Aug. 31	-0.972	-0.750	Aug. 15	-0.961	-0.350	Aug. 31	-0.942	-0.750
Oct. 15	-0.818	-1.550	Sept. 15	-0.870	-0.550	Aug. 31	-0.938	0.300	Sept. 15	-0.884	-0.500
Oct. 31	-0.744	-1.050	Sept. 30	-0.823	-0.150	Sept. 15	-0.865	0.400	Sept. 30	-0.807	-0.900
Nov. 15	-0.644	-1.500	Oct. 15	-0.708	-0.550	Sept. 30	-0.881	0.200	Oct. 15	-0.702	-0.400
Nov. 30	-0.698	-0.950	Oct. 31	-0.547	0.050	Oct. 15	-0.821	-0.100	Oct. 31	-0.597	-0.900
Dec. 15	-0.709	-0.200	Nov. 15	-0.584	0.600	Oct. 31	-0.652	-0.200	Nov. 15	-0.555	-1.200
Dec. 31	-0.678	0.100	Nov. 30	-0.625	0.750	Nov. 15	-0.621	-0.600	Nov. 30	-0.584	-1.700
Jan. 15	-0.620	-0.950	Dec. 15	-0.723	0.150	Nov. 30	-0.574	-0.650	Dec. 15	-0.426	-1.600
Jan. 31	-0.439	-0.700	Dec. 31	-0.743	0.600	Dec. 15	-0.634	-0.200	Dec. 31	-0.159	-2.750
Feb. 15	-0.325	-1.650	Jan. 15	-0.692	0.550	Dec. 31	-0.655	-1.600	Jan. 15	-0.230	-2.900
Feb. 28	0.234	-0.500	Jan. 31	-0.517	-0.650	Jan. 15	-0.702	-1.000	Jan. 31	-0.001	-3.050
Mar. 15	2.110	0.400	Feb. 15	-0.326	-0.350	Jan. 31	-0.664	-0.500	Feb. 15	0.673	-3.650
			Feb. 28	0.064	0.000	Feb. 15	-0.502	-1.650	Feb. 28	1.375	-4.150
			Mar. 15	0.988	0.550	Feb. 28	-0.029	-3.500	Mar. 15	27.531	-2.900
						Mar. 15	9.865	-1.600			

1966			1967			1968		
Date	DI	Spread \$/ton	Date	DI	Spread \$/ton	Date	DI	Spread \$/ton
Aug. 15	-0.963	-1.950	Aug. 15	-0.950	-0.100	Aug. 15	-0.983	-0.850
Aug. 31	-0.854	-1.650	Aug. 31	-0.795	0.150	Aug. 31	-0.953	-0.400
Sept. 15	-0.788	-1.750	Sept. 15	-0.713	-1.350	Sept. 15	-0.905	-0.600
Sept. 30	-0.694	-1.650	Sept. 30	-0.670	-0.800	Sept. 30	-0.524	-1.000
Oct. 15	-0.665	-1.400	Oct. 15	-0.684	-0.300	Oct. 15	-0.309	-0.900
Oct. 31	-0.597	-1.300	Oct. 31	-0.628	-0.850	Oct. 31	-0.215	-1.550
Nov. 15	-0.385	-1.200	Nov. 15	-0.539	-0.700	Nov. 15	-0.283	-1.200
Nov. 30	-0.317	-1.700	Nov. 30	-0.525	-0.300	Nov. 30	-0.393	-1.600
Dec. 15	-0.167	-0.650	Dec. 15	-0.525	-0.450	Dec. 15	-0.407	-1.500
Dec. 31	-0.030	-1.300	Dec. 31	-0.509	0.900	Dec. 31	-0.438	-2.050
Jan. 15	-0.023	0.950	Jan. 15	-0.406	0.600	Jan. 15	-0.375	-1.400
Jan. 31	0.000	0.400	Jan. 31	-0.330	1.750	Jan. 31	-0.174	-1.500
Feb. 15	0.293	1.700	Feb. 15	-0.126	0.600	Feb. 15	0.061	-1.800
Feb. 28	0.659	0.350	Feb. 28	0.296	0.950	Feb. 28	0.634	-2.100
Mar. 15	5.233	-0.850	Mar. 15	2.762	-0.850	Mar. 15	3.689	-1.800



Table 45

JULY OVER SEPTEMBER CHICAGO SOYBEAN MEAL, 1958 - 1968

1958				1959				1960				1961			
Date	DI	Spread		Date	DI	Spread		Date	DI	Spread		Date	DI	Spread	
		\$/ton				\$/ton				\$/ton				\$/ton	
Jan. 31	-0.979	1.300		Jan. 15	-0.995	3.650		Jan. 15	-1.001	1.750		Jan. 15	-1.027	2.300	
Feb. 15	-0.976	1.400		Jan. 31	-0.989	4.500		Jan. 31	-1.016	2.500		Jan. 31	-0.962	3.750	
Feb. 28	-0.954	1.250		Feb. 15	-0.973	4.300		Feb. 15	-0.980	1.600		Feb. 15	-0.955	5.400	
Mar. 15	-0.924	2.100		Feb. 28	-1.002	5.200		Feb. 28	-0.969	2.150		Feb. 28	-0.932	5.700	
Mar. 31	-0.971	3.100		Mar. 15	-0.951	3.100		Mar. 15	-0.951	2.200		Mar. 15	-0.900	6.650	
Apr. 15	-0.953	2.850		Mar. 31	-0.908	3.750		Mar. 31	-0.943	2.700		Mar. 31	-0.876	7.000	
Apr. 30	-0.955	2.900		Apr. 15	-0.891	2.750		Apr. 15	-0.898	1.650		Apr. 15	-0.924	13.150	
May 15	-0.928	2.200		Apr. 30	-0.869	2.200		Apr. 30	-0.884	2.000		Apr. 30	-0.873	10.250	
May 31	-0.942	3.050		May 15	-0.895	2.950		May 15	-0.876	1.450		May 15	-0.907	8.800	
June 15	-0.848	4.650		May 31	-0.899	2.650		May 31	-0.883	1.450		May 31	-0.819	6.500	
June 30	-0.531	6.800		June 15	-0.886	2.700		June 15	-0.792	0.200		June 15	-0.701	3.450	
July 15	0.795	10.700		June 30	-0.844	4.850		June 30	-0.504	-0.050		June 30	-0.418	1.600	
				July 15	-0.663	3.200		July 15	3.199	0.050		July 15	3.649	1.950	
1962				1963				1964				1965			
Date	DI	Spread		Date	DI	Spread		Date	DI	Spread		Date	DI	Spread	
		\$/ton				\$/ton				\$/ton				\$/ton	
Feb. 28	-1.031	1.900		Nov. 15	-1.047	3.250		Oct. 31	-1.084	6.600		Oct. 31	-0.852	2.900	
Mar. 15	-1.001	1.500		Nov. 30	-1.040	3.650		Nov. 15	-0.918	6.900		Nov. 15	-0.769	4.750	
Mar. 31	-0.984	1.750		Dec. 15	-1.014	3.450		Nov. 30	-0.897	5.350		Nov. 30	-0.277	5.000	
Apr. 15	-0.960	2.550		Dec. 31	-0.998	2.950		Dec. 15	-0.884	6.000		Dec. 15	-0.472	4.800	
Apr. 31	-0.925	2.300		Jan. 15	-0.962	2.400		Dec. 31	-0.626	8.500		Dec. 31	-0.688	4.250	
May 15	-0.804	3.150		Jan. 31	-0.961	4.750		Jan. 15	-0.397	6.700		Jan. 15	-0.736	5.400	
May 31	-0.766	4.450		Feb. 15	-0.943	3.600		Jan. 31	-0.253	5.050		Jan. 31	-0.722	7.650	
June 15	-0.674	5.750		Feb. 28	-0.945	3.050		Feb. 15	-0.298	3.550		Feb. 15	-0.635	5.700	
June 30	-0.457	4.400		Mar. 15	-0.930	2.900		Feb. 28	-0.344	4.300		Feb. 28	-0.633	5.900	
July 15	0.449	3.600		Mar. 31	-0.911	2.850		Mar. 15	-0.393	3.350		Mar. 15	-0.610	5.600	
				Apr. 15	-0.918	2.700		Mar. 31	-0.530	2.050		Mar. 31	-0.600	4.150	
				Apr. 30	-0.860	1.400		Apr. 15	-0.685	2.950		Apr. 15	-0.657	3.500	
				May 15	-0.859	1.900		Apr. 30	-0.675	1.200		Apr. 30	-0.696	3.000	
				May 31	-0.861	1.400		May 15	-0.654	0.950		May 15	-0.721	4.300	
				June 15	-0.753	0.700		May 31	-0.639	0.100		May 31	-0.596	4.000	
				June 30	-0.621	0.100		June 15	-0.459	0.300		June 15	-0.405	5.200	
				July 15	0.454	0.000		June 30	-0.185	0.150		June 30	0.044	3.700	
								July 15	0.619	1.200		July 15	1.737	3.800	
1966				1967				1968							
Date	DI	Spread		Date	DI	Spread		Date	DI	Spread					
		\$/ton				\$/ton				\$/ton					
Nov. 30	-1.010	0.700		Oct. 15	-1.035	3.000		Oct. 15	-0.996	1.500					
Dec. 15	-0.941	0.200		Oct. 31	-1.006	2.200		Oct. 31	-0.952	1.700					
Dec. 31	-0.947	0.500		Nov. 15	-0.977	2.150		Nov. 15	-0.946	1.500					
Jan. 15	-0.913	1.000		Nov. 30	-0.970	1.900		Nov. 30	-0.930	1.350					
Jan. 31	-0.916	1.500		Dec. 15	-0.953	1.400		Dec. 15	-0.900	1.300					
Feb. 15	-0.918	2.350		Dec. 31	-0.899	1.100		Dec. 31	-0.891	1.550					
Feb. 28	-0.878	0.450		Jan. 15	-0.889	1.350		Jan. 15	-0.903	1.450					
Mar. 15	-0.876	1.050		Jan. 31	-0.883	1.650		Jan. 31	-0.874	1.350					
Mar. 31	-0.848	0.800		Feb. 15	-0.856	1.250		Feb. 15	-0.846	1.150					
Apr. 15	-0.852	2.050		Feb. 28	-0.853	1.400		Feb. 28	-0.849	1.150					
Apr. 30	-0.883	3.050		Mar. 15	-0.831	0.950		Mar. 15	-0.851	1.100					
May 15	-0.879	3.400		Mar. 31	-0.816	0.800		Mar. 31	-0.839	1.300					
May 31	-0.794	3.400		Apr. 15	-0.788	0.300		Apr. 15	-0.841	1.200					
June 15	-0.506	4.900		Apr. 30	-0.761	0.000		Apr. 30	-0.800	1.400					
June 30	-0.187	8.100		May 15	-0.772	0.150		May 15	-0.770	1.200					
July 15	1.723	4.250		May 31	-0.755	1.450		May 31	-0.692	1.600					
				June 15	-0.693	2.000		June 15	-0.550	3.800					
				June 30	-0.451	3.000		June 30	-0.208	5.350					
				July 15	0.238	5.050		July 15	2.519	3.300					



Table 46

AUGUST OVER SEPTEMBER CHICAGO SOYBEAN MEAL, 1958 - 1968

1958				1959				1960				1961			
Date	DI	Spread	\$/ton	Date	DI	Spread	\$/ton	Date	DI	Spread	\$/ton	Date	DI	Spread	\$/ton
Jan. 31	-0.817	1.250		Jan. 15	-0.873	2.950		Jan. 15	-0.816	1.050		Jan. 15	-1.003	2.800	
Feb. 15	-0.793	1.400		Jan. 31	-0.845	3.500		Jan. 31	-0.888	1.700		Jan. 31	-0.831	4.550	
Feb. 28	-0.750	0.950		Feb. 15	-0.830	3.500		Feb. 15	-0.811	1.250		Feb. 15	-0.785	5.400	
Mar. 15	-0.705	1.650		Feb. 28	-0.892	4.100		Feb. 28	-0.773	1.750		Feb. 28	-0.790	5.500	
Mar. 31	-0.858	1.850		Mar. 15	-0.830	2.550		Mar. 15	-0.711	2.000		Mar. 15	-0.699	6.900	
Apr. 15	-0.822	0.950		Mar. 31	-0.740	2.400		Mar. 31	-0.682	2.500		Mar. 31	-0.686	6.950	
Apr. 30	-0.800	1.300		Apr. 15	-0.698	2.450		Apr. 15	-0.617	1.650		Apr. 15	-0.755	13.150	
May 15	-0.787	1.200		Apr. 30	-0.616	2.300		Apr. 30	-0.580	1.850		Apr. 30	-0.731	10.300	
May 31	-0.793	2.000		May 15	-0.728	2.600		May 15	-0.527	1.500		May 15	-0.808	9.050	
June 15	-0.673	3.300		May 31	-0.795	2.500		May 31	-0.623	1.400		May 31	-0.766	7.050	
June 30	-0.486	3.950		June 15	-0.855	3.050		June 15	-0.714	1.000		June 15	-0.829	3.900	
July 15	-0.226	6.100		June 30	-0.883	3.950		June 30	-0.747	0.900		June 30	-0.817	2.650	
July 31	-0.082	5.900		July 15	-0.838	2.200		July 15	-0.567	0.300		July 15	-0.746	2.350	
Aug. 15	1.478	2.700		July 31	-0.603	0.400		July 31	-0.093	-0.400		July 31	-0.604	4.700	
				Aug. 15	-0.503	0.800		Aug. 15	3.590	-0.300		Aug. 15	0.519	5.250	
1962				1963				1964				1965			
Date	DI	Spread	\$/ton	Date	DI	Spread	\$/ton	Date	DI	Spread	\$/ton	Date	DI	Spread	\$/ton
Feb. 28	-0.997	1.850		Nov. 15	-0.985	2.650		Oct. 31	-0.930	5.600		Oct. 31	0.376	2.650	
Mar. 15	-0.838	1.450		Nov. 30	-0.927	3.000		Nov. 15	0.617	6.600		Nov. 15	0.106	4.500	
Mar. 31	-0.841	1.550		Dec. 15	-0.841	2.800		Nov. 30	-0.008	5.350		Nov. 30	1.758	4.800	
Apr. 15	-0.749	2.250		Dec. 31	-0.819	2.400		Dec. 15	0.271	5.600		Dec. 15	0.651	4.250	
Apr. 30	-0.677	2.050		Jan. 15	-0.800	2.000		Dec. 31	0.661	7.800		Dec. 31	0.446	3.800	
May 15	-0.189	2.450		Jan. 31	-0.742	4.650		Jan. 15	0.136	5.700		Jan. 15	0.007	4.950	
May 31	-0.234	3.700		Feb. 15	-0.680	3.550		Jan. 31	0.231	4.150		Jan. 31	-0.084	6.900	
June 15	-0.336	4.800		Feb. 28	-0.709	2.900		Feb. 15	0.263	3.300		Feb. 15	-0.109	5.300	
June 30	-0.327	3.900		Mar. 15	-0.740	2.750		Feb. 28	0.293	3.800		Feb. 28	-0.194	5.900	
July 15	-0.307	3.300		Mar. 31	-0.742	2.650		Mar. 15	0.333	2.650		Mar. 15	-0.188	5.700	
July 31	-0.194	5.500		Apr. 15	-0.795	2.700		Mar. 31	0.278	1.750		Mar. 31	-0.170	3.900	
Aug. 15	0.678	7.500		Apr. 30	-0.711	1.750		Apr. 15	-0.203	2.700		Apr. 15	-0.228	3.550	
				May 15	-0.666	2.200		Apr. 30	-0.160	1.150		Apr. 30	-0.321	3.200	
				May 31	-0.692	1.500		May 15	-0.186	0.900		May 15	-0.369	4.300	
				June 15	-0.696	1.100		May 31	-0.267	0.600		May 31	-0.439	3.650	
				June 30	-0.682	1.100		June 15	-0.408	0.400		June 15	-0.569	4.950	
				July 15	-0.553	0.150		June 30	-0.506	0.550		June 30	-0.526	4.000	
				July 31	-0.385	0.700		July 15	-0.513	0.750		July 15	-0.556	3.550	
				Aug. 15	0.675	3.000		July 31	0.371	-0.200		July 31	-0.324	4.500	
								Aug. 15	3.062	0.750		Aug. 15	0.115	2.750	
1966				1967				1968							
Date	DI	Spread	\$/ton	Date	DI	Spread	\$/ton	Date	DI	Spread	\$/ton				
Nov. 30	-1.012	0.900		Oct. 15	-0.990	2.800		Oct. 15	-0.142	1.450					
Dec. 15	-0.836	0.500		Oct. 31	-0.884	1.950		Oct. 31	-0.457	1.500					
Dec. 31	-0.837	0.600		Nov. 15	-0.871	1.950		Nov. 15	-0.484	1.250					
Jan. 15	-0.776	0.900		Nov. 30	-0.875	1.750		Nov. 30	-0.457	1.200					
Jan. 31	-0.772	1.500		Dec. 15	-0.854	1.300		Dec. 15	-0.669	1.200					
Feb. 15	-0.756	2.150		Dec. 31	-0.742	0.950		Dec. 31	-0.707	1.500					
Feb. 28	-0.722	0.550		Jan. 15	-0.735	1.200		Jan. 15	-0.774	1.300					
Mar. 15	-0.735	1.250		Jan. 31	-0.751	1.600		Jan. 31	-0.644	1.350					
Mar. 31	-0.711	1.050		Feb. 15	-0.732	1.200		Feb. 15	-0.578	1.100					
Apr. 15	-0.706	1.850		Feb. 28	-0.719	1.150		Feb. 28	-0.551	1.200					
Apr. 30	-0.775	3.050		Mar. 15	-0.687	1.000		Mar. 15	-0.568	1.150					
May 15	-0.793	3.000		Mar. 31	-0.660	0.900		Mar. 31	-0.598	1.350					
May 31	-0.700	3.250		Apr. 15	-0.605	0.300		Apr. 15	-0.602	1.400					
June 15	-0.647	4.050		Apr. 30	-0.573	0.200		Apr. 30	-0.587	1.600					
June 30	-0.526	4.000		May 15	-0.570	0.400		May 15	-0.489	1.500					
July 15	-0.359	1.950		May 31	-0.562	0.700		May 31	-0.350	1.950					
July 31	0.048	1.050		June 15	-0.612	1.000		June 15	-0.369	2.600					
Aug. 15	2.337	3.650		June 30	-0.668	1.350		June 30	-0.423	3.650					
				July 15	-0.730	2.650		July 15	-0.242	2.670					
				July 31	-0.480	0.700		July 31	-0.073	4.250					
				Aug. 15	0.368	1.650		Aug. 15	1.252	3.900					





Table 47

AUGUST OVER DECEMBER CHICAGO SOYBEAN MEAL, 1958 - 1968

1958		DI	Spread \$/ton
Date			
Mar.	31	-1.090	4.200
Apr.	15	-1.008	2.850
Apr.	30	-0.933	2.900
May	15	-0.895	2.550
May	31	-0.840	4.600
June	15	-0.878	6.050
June	30	-0.875	6.650
July	15	-0.805	9.250
July	31	-0.411	8.700
Aug.	15	0.778	4.150

1959		DI	Spread \$/ton
Date			
Feb.	28	-1.138	7.650
Mar.	15	-1.077	6.250
Mar.	31	-1.003	7.000
Apr.	15	-0.799	5.100
Apr.	30	-0.705	5.000
May	15	-0.739	5.450
May	31	-0.602	4.150
June	15	-0.628	5.050
June	30	-0.701	6.100
July	15	-0.552	3.650
July	31	-0.058	0.450
Aug.	15	1.946	1.900

1960			
	Date	DI	Spread \$/ton
May	15	-1.046	3.050
May	31	-0.996	2.750
June	15	-0.919	1.900
June	30	-0.906	2.500
July	15	-0.823	0.750
July	31	-0.580	-1.150
Aug.	15	2.393	-1.950

1961		DI	Spread \$/ton
Date			
Apr.	15	-1.413	23.000
Apr.	30	-1.294	18.650
May	15	-1.250	16.450
May	31	-1.147	13.550
June	15	-1.049	8.450
June	30	-0.978	6.150
July	15	-0.931	5.300
July	31	-0.859	10.100
Aug.	15	0.129	8.400

1962			
Date	DI	Spread	\$/ton
Apr. 15	-1.045	3.900	
Apr. 30	-0.981	3.050	
May 15	-0.913	2.800	
May 31	-0.877	4.450	
June 15	-0.801	5.750	
June 30	-0.661	5.150	
July 15	-0.564	4.450	
July 31	-0.524	7.100	
Aug. 15	-0.064	9.900	

1963		DI	Spread
Date			\$/ton
Feb.	15	-1.080	6.800
Feb.	28	-1.067	6.150
Mar.	15	-0.996	5.150
Mar.	31	-0.915	5.100
Apr.	15	-0.658	5.200
Apr.	30	-0.352	4.350
May	15	-0.209	3.800
May	31	-0.002	3.100
June	15	-0.061	2.800
June	30	0.147	2.100
July	15	0.708	1.350
July	31	0.748	2.600
Aug.	15	2.876	5.250

Date		DI	Spread \$/ton
Jan.	15	-1.094	7.700
Jan.	31	-0.907	5.350
Feb.	15	-0.805	3.600
Feb.	28	-0.675	3.900
Mar.	15	-0.298	2.800
Mar.	31	-0.154	1.850
Apr.	15	-0.341	3.550
Apr.	30	-0.128	1.400
May	15	0.018	0.950
May	31	0.107	1.150
June	15	-0.036	1.350
June	30	-0.111	1.150
July	15	0.064	1.000
July	31	1.503	-0.150
Aug.	15	8.044	0.000

Date		DI	Spread \$/ton
Jan.	15	-1.111	8.350
Jan.	31	-1.001	9.450
Feb.	15	-0.825	8.050
Feb.	28	-0.814	8.300
Mar.	15	-0.789	7.600
Mar.	31	-0.675	5.700
Apr.	15	-0.644	6.750
Apr.	30	-0.631	5.750
May	15	-0.595	7.500
May	31	-0.634	6.900
June	15	-0.715	9.050
June	30	-0.697	9.100
July	15	-0.721	7.600
July	31	-0.570	7.700
Aug.	15	0.031	5.050

1966		
Date	DI	Spread \$/ton
Jan. 15	-0.987	4.350
Jan. 31	-0.926	4.800
Feb. 15	-0.882	5.050
Feb. 28	-0.840	2.200
Mar. 15	-0.839	3.250
Mar. 31	-0.816	2.650
Apr. 15	-0.729	4.100
Apr. 30	-0.737	7.300
May 15	-0.748	7.300
May 31	-0.696	10.450
June 15	-0.702	14.400
June 30	-0.656	15.900
July 15	-0.438	8.600
July 31	-0.177	7.200
Aug. 15	1.205	15.100

1967		DI	Spread \$/ton
Date			
Jan.	15	-0.980	2.000
Jan.	31	-0.967	2.600
Feb.	15	-0.904	1.600
Feb.	28	-0.778	1.550
Mar.	15	-0.694	1.250
Mar.	31	-0.603	1.050
Apr.	15	-0.518	0.650
Apr.	30	-0.399	0.300
May	15	-0.406	0.700
May	31	-0.470	1.300
June	15	-0.568	2.500
June	30	-0.540	2.750
July	15	-0.446	4.400
July	31	-0.144	2.300
Aug.	15	0.938	4.600

1968			
Date	DI		Spread \$/ton
Jan. 15	-0.999		2.800
Jan. 31	-0.918		2.600
Feb. 15	-0.637		1.850
Feb. 28	-0.533		1.800
Mar. 15	-0.558		1.950
Mar. 31	-0.596		2.450
Apr. 15	-0.537		2.300
Apr. 30	-0.526		2.850
May 15	-0.326		2.550
May 31	-0.232		2.900
June 15	-0.199		4.050
June 30	-0.302		5.400
July 15	-0.113		6.670
July 31	0.050		7.500
Aug. 15	1.480		8.580



Table 48

SEPTEMBER OVER OCTOBER CHICAGO SOYBEAN MEAL, 1958 - 1968

1958				1959				1960				1961			
Date	DI	Spread \$/ton		Date	DI	Spread \$/ton		Date	DI	Spread \$/ton		Date	DI	Spread \$/ton	
Jan. 31	0.646	1.000		Jan. 31	-0.743	1.150		Jan. 31	-0.829	1.600		Feb. 15	-0.313	1.800	
Feb. 15	1.697	0.950		Feb. 15	-0.585	2.100		Feb. 15	-0.627	1.750		Feb. 28	-0.062	11.300	
Feb. 28	1.606	1.200		Feb. 28	-0.327	2.500		Feb. 28	-0.576	1.800		Mar. 15	-0.086	7.750	
Mar. 15	0.123	1.200		Mar. 15	-0.198	2.200		Mar. 15	-0.230	1.700		Mar. 31	-0.048	8.100	
Mar. 31	0.223	1.900		Mar. 31	0.052	2.500		Mar. 31	-0.296	1.950		Apr. 15	-0.002	9.050	
Apr. 15	0.121	1.900		Apr. 15	-0.006	2.900		Apr. 15	-0.361	1.850		Apr. 30	-0.151	7.750	
Apr. 30	0.004	1.650		Apr. 30	-0.061	3.350		Apr. 30	-0.312	1.950		May 15	-0.099	6.900	
May 15	-0.023	1.450		May 15	0.078	2.650		May 15	-0.215	1.850		May 31	-0.111	6.150	
May 31	-0.014	2.700		May 31	0.456	1.600		May 31	-0.181	1.550		June 15	0.103	4.200	
June 15	-0.493	2.750		June 15	0.603	1.350		June 15	-0.270	1.300		June 30	0.130	3.600	
June 30	-0.481	2.600		June 30	0.628	1.900		June 30	-0.229	1.400		July 15	-0.010	3.100	
July 15	-0.429	2.900		July 15	0.869	1.200		July 15	-0.278	0.750		July 31	-0.121	5.300	
July 31	-0.308	3.200		July 31	0.497	0.100		July 31	-0.428	-0.250		Aug. 15	-0.222	3.950	
Aug. 15	-0.338	1.750		Aug. 15	0.202	1.150		Aug. 15	-0.096	-0.650		Aug. 31	-0.205	3.750	
Aug. 31	-0.002	3.500		Aug. 31	0.325	1.400		Aug. 31	0.601	0.050		Sept. 15	0.431	2.250	
Sept. 15	-0.686	3.100		Sept. 15	1.299	0.800		Sept. 15	1.198	0.400					
1962				1963				1964				1965			
Date	DI	Spread \$/ton		Date	DI	Spread \$/ton		Date	DI	Spread \$/ton		Date	DI	Spread \$/ton	
Mar. 31	-0.759	1.300		Jan. 15	0.589	2.350		Nov. 15	-0.886	2.150		Nov. 15	-0.862	0.950	
Apr. 15	-0.606	1.800		Jan. 31	2.434	3.300		Nov. 30	-0.821	1.850		Nov. 30	-0.744	1.850	
Apr. 30	-0.549	1.350		Feb. 15	2.931	3.750		Dec. 15	-0.687	1.750		Dec. 15	-0.694	2.750	
May 15	-0.685	0.700		Feb. 28	3.252	3.450		Dec. 31	-0.821	2.800		Dec. 31	-0.648	2.900	
May 31	-0.593	1.000		Mar. 15	2.944	2.500		Jan. 15	-0.737	2.200		Jan. 15	-0.568	3.450	
June 15	-0.541	1.300		Mar. 31	2.503	2.750		Jan. 31	-0.684	1.350		Jan. 31	-0.484	2.800	
June 30	-0.525	1.350		Apr. 15	3.124	2.500		Feb. 15	-0.658	0.700		Feb. 15	-0.348	2.800	
July 15	-0.527	0.600		Apr. 30	2.711	2.600		Feb. 28	-0.557	0.500		Feb. 28	-0.291	2.250	
July 31	-0.534	1.450		May 15	2.702	1.650		Mar. 15	-0.359	0.650		Mar. 15	-0.216	1.600	
Aug. 15	-0.565	2.250		May 31	3.149	1.550		Mar. 31	-0.131	0.550		Mar. 31	-0.207	1.400	
Aug. 31	-0.577	1.850		June 15	2.385	1.650		Apr. 15	0.086	1.100		Apr. 15	-0.095	2.850	
Sept. 15	-0.031	5.150		June 30	2.056	0.900		Apr. 30	0.083	0.750		Apr. 30	0.006	2.150	
				July 15	1.438	1.050		May 15	0.071	0.350		May 15	-0.073	2.550	
				July 31	0.912	1.300		May 31	0.290	0.700		May 31	-0.040	2.700	
				Aug. 15	0.555	1.800		June 15	0.365	0.950		June 15	-0.118	3.100	
				Aug. 31	0.878	2.350		June 30	0.561	0.700		June 30	-0.168	3.950	
				Sept. 15	1.159	1.100		July 15	0.845	0.450		July 15	-0.138	3.000	
								July 31	0.359	0.100		July 31	-0.249	1.900	
								Aug. 15	0.728	-0.450		Aug. 15	-0.221	1.350	
								Aug. 31	1.789	-0.250		Aug. 31	-0.184	3.000	
								Sept. 15	7.414	1.350		Sept. 15	0.870	3.800	
1966				1967				1968							
Date	DI	Spread \$/ton		Date	DI	Spread \$/ton		Date	DI	Spread \$/ton					
Jan. 15	-0.303	3.050		Nov. 15	-0.703	0.750		Jan. 15	-0.876	1.350					
Jan. 31	-0.003	2.250		Nov. 30	-0.672	2.000		Jan. 31	-0.697	1.150					
Feb. 15	0.376	2.750		Dec. 15	-0.412	2.350		Feb. 15	-0.704	0.600					
Feb. 28	0.343	1.600		Dec. 31	-0.308	1.300		Feb. 28	-0.635	0.500					
Mar. 15	0.594	2.000		Jan. 15	-0.333	0.800		Mar. 15	-0.553	0.600					
Mar. 31	0.815	1.600		Jan. 31	-0.257	0.800		Mar. 31	-0.450	0.850					
Apr. 15	0.694	1.850		Feb. 15	0.479	0.250		Apr. 15	-0.258	1.000					
Apr. 30	0.879	3.300		Feb. 28	0.471	0.400		Apr. 30	-0.076	1.250					
May 15	0.699	3.150		Mar. 15	0.432	0.250		May 15	-0.256	0.900					
May 31	0.427	4.850		Mar. 31	0.480	0.250		May 31	-0.351	0.800					
June 15	0.133	6.700		Apr. 15	0.435	0.250		June 15	-0.364	1.200					
June 30	0.057	8.400		Apr. 30	0.481	0.150		June 30	-0.429	1.450					
July 15	0.037	4.750		May 15	0.441	0.400		July 15	-0.462	2.750					
July 31	-0.083	4.200		May 31	0.290	0.650		July 31	-0.403	2.050					
Aug. 15	-0.229	8.800		June 15	0.188	1.100		Aug. 15	-0.419	3.450					
Aug. 31	0.154	11.700		June 30	0.178	1.100		Aug. 31	0.113	5.250					
Sept. 15	1.182	3.700		July 15	0.443	1.350		Sept. 15	1.100	3.950					
				July 31	0.458	1.250									
				Aug. 15	0.109	1.850									
				Aug. 31	0.176	6.500									
				Sept. 15	1.571	3.600									







Table 50

DECEMBER OVER JANUARY CHICAGO SOYBEAN MEAL, 1958 - 1967<sup>1</sup>

1958		
Date	DI	Spread \$/ton
May 31	-0.929	-0.150
June 15	-0.849	-0.500
June 30	-0.725	0.000
July 15	-0.638	0.150
July 31	-0.736	-0.300
Aug. 15	-0.707	-0.400
Aug. 31	-0.675	0.050
Sept. 15	-0.714	0.250
Sept. 30	-0.737	-0.150
Oct. 15	-0.633	-0.750
Oct. 31	-0.535	-0.650
Nov. 15	0.260	1.600
Nov. 30	1.174	1.600
Dec. 15	2.959	2.050

1959		
Date	DI	Spread \$/ton
Mar. 31	-0.892	-1.850
Apr. 15	-0.833	0.650
Apr. 30	-0.812	0.800
May 15	-0.819	0.100
May 31	-0.825	0.400
June 15	-0.802	-0.750
June 30	-0.765	-0.250
July 15	-0.755	-0.450
July 31	-0.663	-0.400
Aug. 15	-0.677	-0.400
Aug. 31	-0.660	-0.650
Sept. 15	-0.619	-0.650
Sept. 30	-0.624	-0.400
Oct. 15	-0.537	0.000
Oct. 31	-0.377	-0.100
Nov. 15	-0.166	0.100
Nov. 30	0.120	0.300
Dec. 15	2.551	0.650

1960			
Date	DI	Spread	\$/ton
May 31	-0.885	-0.200	
June 15	-0.960	-0.350	
June 30	-0.792	-0.350	
July 15	-0.648	-0.550	
July 31	-0.715	-0.550	
Aug. 15	-0.757	-0.550	
Aug. 31	-0.708	-0.550	
Sept. 15	-0.622	-0.750	
Sept. 30	-0.519	-0.850	
Oct. 15	-0.453	-0.850	
Oct. 31	-0.411	-0.950	
Nov. 15	0.041	-1.150	
Nov. 30	0.689	-1.100	
Dec. 15	9.609	-0.450	

1961		DI	Spread
Date			\$/con
June	30	-0.625	-0.850
July	15	-0.315	-0.950
July	31	-0.326	-0.750
Aug.	15	-0.358	-1.000
Aug.	31	-0.366	-1.000
Sept.	15	-0.190	-1.100
Sept.	30	-0.115	-1.100
Oct.	15	-0.075	-0.900
Oct.	31	0.150	-0.750
Nov.	15	0.666	-0.450
Nov.	30	0.938	0.250
Dec.	15	2.403	2.350

1962		DI	Spread \$/ton
Date			
June	15	-0.658	-0.200
June	30	-0.481	-0.450
July	15	-0.262	-0.600
July	31	-0.173	-0.400
Aug.	15	-0.168	-0.450
Aug.	31	-0.247	-0.300
Sept.	15	-0.394	-0.500
Sept.	30	-0.437	-0.250
Oct.	15	-0.350	0.000
Oct.	31	-0.215	1.500
Nov.	15	0.066	1.950
Nov.	30	0.308	0.900
Dec.	15	2.722	1.100

1963		DI	Spread \$/ton
Date			
Mar.	15	-0.866	-0.300
Mar.	31	-0.925	-0.100
Apr.	15	-0.795	-0.200
Apr.	30	-0.652	0.000
May	15	-0.463	-0.150
May	31	-0.514	0.000
June	15	-0.480	-0.200
June	30	-0.384	-0.100
July	15	-0.348	-0.050
July	31	-0.277	-0.100
Aug.	15	-0.276	-0.100
Aug.	31	-0.331	-0.100
Sept.	15	-0.279	-0.200
Sept.	30	-0.058	-0.900
Oct.	15	0.102	-0.450
Oct.	31	0.156	-0.950
Nov.	15	0.588	-0.900
Nov.	30	1.131	-1.050
Dec.	15	15.107	-0.950

1964	Date	DI	Spread \$/ton
Feb.	15	-0.970	-0.350
Feb.	28	-0.978	-0.150
Mar.	15	-0.960	-0.050
Mar.	31	-0.922	-0.050
Apr.	15	-0.861	-0.200
Apr.	30	-0.639	-0.250
May	15	-0.665	-0.350
May	31	-0.670	-0.100
June	15	-0.677	-0.250
June	30	-0.577	-0.250
July	15	-0.546	-0.050
July	31	-0.530	-0.050
Aug.	15	-0.370	-0.450
Aug.	31	-0.208	-0.200
Sept.	15	-0.302	-0.200
Sept.	30	-0.282	-0.050
Oct.	15	-0.247	0.000
Oct.	31	-0.185	0.500
Nov.	15	0.144	-0.400
Nov.	30	0.666	-0.800
Dec.	15	3.083	-0.150

1965		
Date	DI	Spread \$/ton
Feb. 15	-0.775	0.050
Feb. 28	-0.765	0.150
Mar. 15	-0.745	-0.100
Mar. 31	-0.736	0.100
Apr. 15	-0.727	-0.200
Apr. 30	-0.689	-0.400
May 15	-0.709	-0.200
May 31	-0.694	-0.250
June 15	-0.536	-0.200
June 30	-0.545	-0.150
July 15	-0.491	-0.050
July 31	-0.460	-0.150
Aug. 15	-0.426	-0.400
Aug. 31	-0.425	-0.450
Sept. 15	-0.235	-0.400
Sept. 30	-0.283	0.100
Oct. 15	-0.413	0.100
Oct. 31	-0.390	1.850
Nov. 15	-0.146	1.600
Nov. 30	0.041	1.650
Dec. 15	1.504	2.500

1966	Date	DI	Spread \$/ton
Feb.	15	-0.866	0.150
Feb.	28	-0.859	0.300
Mar.	15	-0.825	0.100
Mar.	31	-0.788	0.050
Apr.	15	-0.612	0.100
Apr.	30	-0.539	-0.100
May	15	-0.543	0.000
May	31	-0.488	-0.100
June	15	-0.542	0.300
June	30	-0.491	0.150
July	15	-0.509	0.400
July	31	-0.520	0.000
Aug.	15	-0.486	0.250
Aug.	31	-0.537	1.100
Sept.	15	-0.528	0.100
Sept.	30	-0.495	0.750
Oct.	15	-0.562	0.400
Oct.	31	-0.543	0.400
Nov.	15	-0.297	0.800
Nov.	30	-0.060	0.000
Dec.	15	2.298	3.550

1967		DI	Spread \$/ton
Date			
Feb.	15	-0.743	0.000
Feb.	28	-0.643	0.000
Mar.	15	-0.642	0.050
Mar.	31	-0.559	0.000
Apr.	15	-0.602	-0.200
Apr.	30	-0.600	0.050
May	15	-0.526	-0.050
May	31	-0.526	0.000
June	15	-0.455	0.050
June	30	-0.540	0.000
July	15	-0.574	-0.050
July	31	-0.522	0.100
Aug.	15	-0.445	0.050
Aug.	31	-0.473	0.000
Sept.	15	-0.518	0.000
Sept.	30	-0.445	-0.050
Oct.	15	-0.458	-0.050
Oct.	31	-0.243	-0.400
Nov.	15	-0.426	-0.400
Nov.	30	0.602	-0.750
Dec.	15	3.096	-0.150

1

This spread compares months traded in different calendar years; e.g., December 1958 over January 1959. The labels given for each spread refer to the calendar year in which December trades, thus the spread labeled 1958 compares December 1958 with January 1959. Also since data for 1969 were not available, only 10 spreads could be considered.





Table 51  
MARCH OVER MAY CHICAGO RYE, 1958 - 1968

1958				1959				1960				1961			
Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.
June 15	-0.814	-0.100		June 30	-0.961	0.700		July 31	-0.905	2.300		June 15	-1.006	-0.300	
June 30	-0.796	-0.100		July 15	-0.849	-0.500		Aug. 15	-0.842	1.300		June 30	-0.876	0.200	
July 15	-0.730	0.400		July 31	-0.815	0.200		Aug. 31	-0.769	1.600		July 15	-0.742	-1.600	
July 31	-0.650	-0.300		Aug. 15	-0.770	-0.100		Sept. 15	-0.734	0.800		July 31	-0.636	-1.200	
Aug. 15	-0.601	-0.100		Aug. 31	-0.734	0.400		Sept. 30	-0.731	1.300		Aug. 15	-0.618	-0.500	
Aug. 31	-0.581	-0.200		Sept. 15	-0.628	1.000		Oct. 15	-0.706	0.700		Aug. 31	-0.553	-1.200	
Sept. 15	-0.522	0.000		Sept. 30	-0.651	1.200		Oct. 31	-0.618	1.100		Sept. 15	-0.618	-0.900	
Sept. 30	-0.590	0.000		Oct. 15	-0.563	2.200		Nov. 15	-0.556	0.900		Sept. 30	-0.584	-0.800	
Oct. 15	-0.612	-0.300		Oct. 31	-0.568	3.400		Nov. 30	-0.540	0.000		Oct. 15	-0.564	-0.700	
Oct. 31	-0.602	0.900		Nov. 15	-0.552	3.900		Dec. 15	-0.530	-1.100		Oct. 31	-0.636	-2.200	
Nov. 15	-0.603	1.300		Nov. 30	-0.501	3.600		Dec. 31	-0.496	-1.600		Nov. 15	-0.659	-2.200	
Nov. 30	-0.628	2.700		Dec. 15	-0.560	4.600		Jan. 15	-0.445	-1.600		Nov. 30	-0.611	-3.900	
Dec. 15	-0.675	4.400		Dec. 31	-0.587	5.400		Jan. 31	-0.389	-2.300		Dec. 15	-0.570	-3.400	
Dec. 31	-0.626	4.900		Jan. 15	-0.494	4.600		Feb. 15	-0.238	-2.200		Dec. 31	-0.559	-2.500	
Jan. 15	-0.617	5.100		Jan. 31	-0.411	3.700		Feb. 28	0.364	-3.200		Jan. 15	-0.349	-3.200	
Jan. 31	-0.590	7.000		Feb. 15	-0.400	4.000		Mar. 15	5.711	-2.500		Jan. 31	-0.010	-4.000	
Feb. 15	-0.475	5.000		Feb. 28	-0.229	4.400						Feb. 15	1.031	-4.200	
Feb. 28	-0.213	1.600		Mar. 15	0.167	5.400						Feb. 28	2.002	-4.200	
Mar. 15	0.538	2.400										Mar. 15	16.052	-2.800	

1962				1963				1964				1965			
Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.
June 30	-0.783	-1.500		June 15	-0.771	1.600		June 15	-1.004	1.300		June 15	-0.957	-0.700	
July 15	-0.702	-0.500		June 30	-0.737	1.200		June 30	-0.946	0.800		June 30	-0.842	-0.100	
July 31	-0.744	-0.500		July 15	-0.705	0.100		July 15	-0.864	1.300		July 15	-0.588	-0.300	
Aug. 15	-0.735	0.000		July 31	-0.651	-0.300		July 31	-0.757	1.100		July 31	-0.465	-0.400	
Aug. 31	-0.686	0.200		Aug. 15	-0.610	-0.200		Aug. 15	-0.685	1.000		Aug. 15	-0.562	0.000	
Sept. 15	-0.615	0.400		Aug. 31	-0.530	0.000		Aug. 31	-0.733	0.800		Aug. 31	-0.622	-0.200	
Sept. 30	-0.584	0.300		Sept. 15	-0.563	-0.200		Sept. 15	-0.686	1.700		Sept. 15	-0.638	-0.300	
Oct. 15	-0.624	0.200		Sept. 30	-0.626	-0.500		Sept. 30	-0.566	0.900		Sept. 30	-0.638	-2.000	
Oct. 31	-0.616	1.500		Oct. 15	-0.618	-0.300		Oct. 15	-0.531	0.500		Oct. 15	-0.656	-2.200	
Nov. 15	-0.617	1.700		Oct. 31	-0.554	0.200		Oct. 31	-0.511	1.200		Oct. 31	-0.625	-2.200	
Nov. 30	-0.616	2.100		Nov. 15	-0.572	0.000		Nov. 15	-0.455	-0.900		Nov. 15	-0.590	-1.900	
Dec. 15	-0.674	2.600		Nov. 30	-0.573	0.500		Nov. 30	-0.509	-1.600		Nov. 30	-0.628	-2.700	
Dec. 31	-0.672	3.800		Dec. 15	-0.534	1.200		Dec. 15	-0.551	-1.500		Dec. 15	-0.611	-2.200	
Jan. 15	-0.548	4.000		Dec. 31	-0.540	3.300		Dec. 31	-0.545	-1.900		Dec. 31	-0.570	-2.200	
Jan. 31	-0.458	2.300		Jan. 15	-0.426	3.700		Jan. 15	-0.392	-2.700		Jan. 15	-0.481	-1.600	
Feb. 15	-0.317	0.500		Jan. 31	-0.276	2.000		Jan. 31	-0.169	-2.200		Jan. 31	-0.360	-2.000	
Feb. 28	-0.051	1.300		Feb. 15	-0.072	1.000		Feb. 15	0.139	-2.400		Feb. 15	-0.322	-2.000	
Mar. 15	0.649	2.500		Feb. 28	0.029	0.800		Feb. 28	1.180	-3.900		Feb. 28	0.350	-3.000	
				Mar. 15	0.630	2.500		Mar. 15	13.531	-3.000		Mar. 15	2.408	-1.000	

1966				1967				1968			
Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.	Date	DI	Spread	¢/bu.
July 31	-0.928	-1.100		June 15	-0.934	-1.300		June 15	-0.945	-2.200	
Aug. 15	-0.865	-1.000		June 30	-0.818	-2.000		June 30	-0.783	-2.200	
Aug. 31	-0.808	-1.300		July 15	-0.792	-1.200		July 15	-0.594	-3.500	
Sept. 15	-0.846	-0.800		July 31	-0.800	-1.000		July 31	-0.630	-2.200	
Sept. 30	-0.808	-1.500		Aug. 15	-0.754	-1.500		Aug. 15	-0.549	-3.000	
Oct. 15	-0.661	-2.000		Aug. 31	-0.651	-2.000		Aug. 31	-0.449	-2.700	
Oct. 31	-0.680	-2.500		Sept. 15	-0.665	-2.800		Sept. 15	-0.453	-3.000	
Nov. 15	-0.595	-2.200		Sept. 30	-0.618	-3.800		Sept. 30	-0.546	-2.900	
Nov. 30	-0.544	-2.800		Oct. 15	-0.497	-3.300		Oct. 15	-0.595	-2.800	
Dec. 15	-0.504	-2.300		Oct. 31	-0.411	-3.300		Oct. 31	-0.605	-3.100	
Dec. 31	-0.436	-2.400		Nov. 15	-0.433	-2.900		Nov. 15	-0.549	-3.000	
Jan. 15	0.319	-2.100		Nov. 30	-0.498	-4.000		Nov. 30	-0.518	-3.900	
Jan. 31	0.922	-1.300		Dec. 15	-0.386	-4.500		Dec. 15	-0.554	-3.400	
Feb. 15	1.715	-2.000		Dec. 31	-0.333	-3.900		Dec. 31	-0.523	-3.000	
Feb. 28	3.595	-2.500		Jan. 15	-0.275	-4.200		Jan. 15	-0.418	-2.900	
Mar. 15	25.865	-3.000		Jan. 31	-0.120	-4.000		Jan. 31	-0.298	-2.000	
				Feb. 15	0.102	-3.900		Feb. 15	-0.051	-0.900	
				Feb. 28	1.035	-4.200		Feb. 28	0.984	-1.900	
				Mar. 15	30.855	-3.200		Mar. 15	9.706	-2.200	



Table 52  
MARCH OVER JULY CHICAGO RYE, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Aug. 15	-1.076	2.700	Aug. 31	-1.095	5.400	Aug. 31	-1.119	8.900	Aug. 31	-1.092	3.500
Aug. 31	-1.095	5.500	Sept. 15	-1.107	7.300	Sept. 15	-1.114	9.900	Sept. 15	-1.081	2.700
Sept. 15	-1.093	6.500	Sept. 30	-1.110	8.300	Sept. 30	-1.062	7.500	Sept. 30	-1.080	3.200
Sept. 30	-1.092	6.500	Oct. 15	-1.123	12.000	Oct. 15	-0.998	5.500	Oct. 15	-1.079	3.200
Oct. 15	-1.072	4.700	Oct. 31	-1.081	11.000	Oct. 31	-0.958	6.600	Oct. 31	-1.034	-0.500
Oct. 31	-1.085	6.700	Nov. 15	-1.038	9.500	Nov. 15	-0.932	7.700	Nov. 15	-1.012	-2.000
Nov. 15	-1.085	7.400	Nov. 30	-1.033	9.600	Nov. 30	-0.915	6.300	Nov. 30	-0.993	-3.400
Nov. 30	-1.103	10.200	Dec. 15	-1.033	10.300	Dec. 15	-0.884	4.900	Dec. 15	-0.978	-3.100
Dec. 15	-1.124	13.000	Dec. 31	-1.028	11.900	Dec. 31	-0.861	2.900	Dec. 31	-0.939	-4.000
Dec. 31	-1.049	6.500	Jan. 15	-1.026	15.800	Jan. 15	-0.870	2.700	Jan. 15	-0.882	-4.600
Jan. 15	-1.122	15.900	Jan. 31	-0.963	14.000	Jan. 31	-0.837	1.200	Jan. 31	-0.797	-6.800
Jan. 31	-1.124	16.400	Feb. 15	-0.960	18.000	Feb. 15	-0.804	0.500	Feb. 15	-0.575	-6.700
Feb. 15	-1.035	12.500	Feb. 28	-0.911	20.500	Feb. 28	-0.587	-2.500	Feb. 28	-0.374	-6.500
Feb. 28	-0.908	12.600	Mar. 15	-0.732	22.000	Mar. 15	1.157	-2.300	Mar. 15	3.718	-4.800
Mar. 15	-0.666	17.500									
1962			1963			1964			1965		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Aug. 15	-1.082	3.700	Sept. 30	-1.092	5.000	Aug. 15	-1.090	5.000	Aug. 15	-1.042	2.500
Aug. 31	-1.070	2.200	Oct. 15	-1.073	3.700	Aug. 31	-1.075	5.600	Aug. 31	-1.049	3.500
Sept. 15	-1.060	2.000	Oct. 31	-1.061	4.000	Sept. 15	-1.084	9.200	Sept. 15	-1.051	3.700
Sept. 30	-1.056	4.300	Nov. 15	-1.052	4.100	Sept. 30	-1.072	12.900	Sept. 30	-1.011	1.000
Oct. 15	-1.060	5.400	Nov. 30	-1.048	3.700	Oct. 15	-1.013	8.200	Oct. 15	-0.969	-1.400
Oct. 31	-1.071	8.000	Dec. 15	-1.035	4.200	Oct. 31	-1.024	10.000	Oct. 31	-0.972	-2.500
Nov. 15	-1.048	7.600	Dec. 31	-1.043	6.700	Nov. 15	-1.000	8.000	Nov. 15	-0.961	-2.000
Nov. 30	-1.057	9.100	Jan. 15	-1.003	7.000	Nov. 30	-0.975	3.000	Nov. 30	-0.949	-4.000
Dec. 15	-1.054	8.600	Jan. 31	-0.958	5.400	Dec. 15	-0.979	5.200	Dec. 15	-0.956	-3.400
Dec. 31	-1.054	10.100	Feb. 15	-0.891	4.500	Dec. 31	-0.968	3.500	Dec. 31	-0.961	-1.400
Jan. 15	-1.015	8.300	Feb. 28	-0.868	5.300	Jan. 15	-0.926	4.100	Jan. 15	-0.942	-2.500
Jan. 31	-0.983	8.900	Mar. 15	-0.704	5.300	Jan. 31	-0.865	4.500	Jan. 31	-0.913	-3.300
Feb. 15	-0.927	6.000				Feb. 15	-0.808	4.700	Feb. 15	-0.897	-3.900
Feb. 28	-0.841	6.000				Feb. 28	-0.527	-1.400	Feb. 28	-0.791	-4.900
Mar. 15	-0.680	7.200				Mar. 15	2.123	-2.000	Mar. 15	-0.521	-2.300
1966			1967			1968					
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.			
Aug. 15	-1.045	1.500	Aug. 15	-1.068	3.200	Aug. 31	-1.039	-2.500			
Aug. 31	-1.009	0.500	Aug. 31	-1.033	-0.800	Sept. 15	-1.031	-3.400			
Sept. 15	-1.019	0.800	Sept. 15	-1.005	-3.800	Sept. 30	-1.029	-3.200			
Sept. 30	-0.985	-0.500	Sept. 30	-0.992	-4.000	Oct. 15	-1.024	-3.800			
Oct. 15	-0.969	-1.200	Oct. 15	-0.987	-3.800	Oct. 31	-1.023	-3.700			
Oct. 31	-0.972	-2.100	Oct. 31	-0.988	-3.600	Nov. 15	-1.013	-4.100			
Nov. 15	-0.966	-2.500	Nov. 15	-0.992	-4.000	Nov. 30	-0.989	-6.000			
Nov. 30	-0.938	-3.700	Nov. 30	-0.980	-6.600	Dec. 15	-0.988	-5.800			
Dec. 15	-0.923	-3.300	Dec. 15	-0.974	-6.500	Dec. 31	-0.988	-5.000			
Dec. 31	-0.900	-3.300	Dec. 31	-0.957	-6.000	Jan. 15	-0.987	-4.200			
Jan. 15	-0.765	-2.600	Jan. 15	-0.947	-6.600	Jan. 31	-0.953	-3.000			
Jan. 31	-0.708	-2.500	Jan. 31	-0.935	-5.700	Feb. 15	-0.928	-2.000			
Feb. 15	-0.515	-3.000	Feb. 15	-0.904	-6.300	Feb. 28	-0.799	-3.400			
Feb. 28	-0.189	-4.200	Feb. 28	-0.742	-7.000	Mar. 15	0.648	-4.500			
Mar. 15	4.022	-5.000	Mar. 15	3.855	-6.000						



Table 53

## MARCH OVER SEPTEMBER CHICAGO RYE, 1958 - 1968

1958				1959				1960				1961			
Date	DI	Spread		Date	DI	Spread		Date	DI	Spread		Date	DI	Spread	
		¢/bu.				¢/bu.				¢/bu.				¢/bu.	
Dec. 15	-1.181	10.900		Dec. 31	-1.185	10.700		Nov. 30	-1.145	7.500		Dec. 31	-1.044	-5.300	
Dec. 31	-1.211	14.000		Jan. 15	-1.208	14.800		Dec. 15	-1.116	5.600		Jan. 15	-1.018	-7.100	
Jan. 15	-1.193	13.400		Jan. 31	-1.183	13.200		Dec. 31	-1.064	1.900		Jan. 31	-0.955	-9.600	
Jan. 31	-1.196	14.000		Feb. 15	-1.208	18.300		Jan. 15	-1.036	1.400		Feb. 15	-0.853	-9.700	
Feb. 15	-1.125	9.900		Feb. 28	-1.152	21.900		Jan. 31	-1.013	0.200		Feb. 28	-0.688	-10.000	
Feb. 28	-1.083	10.000		Mar. 15	-1.083	25.600		Feb. 15	-0.967	-0.400		Mar. 15	1.073	-7.400	
Mar. 15	-1.035	15.400						Feb. 28	-0.805	-3.900					
								Mar. 15	0.287	-3.300					
1962				1963				1964				1965			
Date	DI	Spread		Date	DI	Spread		Date	DI	Spread		Date	DI	Spread	
		¢/bu.				¢/bu.				¢/bu.				¢/bu.	
Dec. 15	-1.148	7.900		Dec. 31	-1.151	7.000		Dec. 15	-1.119	7.100		Dec. 31	-1.071	-2.000	
Dec. 31	-1.161	10.600		Jan. 15	-1.152	7.700		Dec. 31	-1.097	4.400		Jan. 15	-1.049	-3.500	
Jan. 15	-1.124	8.700		Jan. 31	-1.133	6.900		Jan. 15	-1.085	5.600		Jan. 31	-1.044	-4.000	
Jan. 31	-1.109	8.800		Feb. 15	-1.084	4.500		Jan. 31	-1.079	7.400		Feb. 15	-1.027	-5.000	
Feb. 15	-1.063	6.000		Feb. 28	-1.085	5.300		Feb. 15	-1.050	6.000		Feb. 28	-0.993	-6.000	
Feb. 28	-1.032	6.000		Mar. 15	-1.042	4.500		Feb. 28	-0.930	-0.300		Mar. 15	-0.945	-3.800	
Mar. 15	-0.944	7.000						Mar. 15	0.200	-1.600					
1966				1967				1968							
Date	DI	Spread		Date	DI	Spread		Date	DI	Spread					
		¢/bu.				¢/bu.				¢/bu.					
Oct. 15	-1.066	-1.500		Oct. 15	-1.043	-4.800		Nov. 30	-1.019	-7.900					
Oct. 31	-1.056	-2.700		Oct. 31	-1.046	-4.100		Dec. 15	-1.032	-6.300					
Nov. 15	-1.051	-3.200		Nov. 15	-1.035	-5.500		Dec. 31	-1.019	-7.200					
Nov. 30	-1.020	-4.500		Nov. 30	-1.009	-8.200		Jan. 15	-1.012	-5.700					
Dec. 15	-1.013	-4.300		Dec. 15	-1.006	-8.500		Jan. 31	-1.000	-4.300					
Dec. 31	-1.001	-4.400		Dec. 31	-0.998	-8.200		Feb. 15	-0.979	-2.800					
Jan. 15	-0.949	-2.400		Jan. 15	-0.981	-9.600		Feb. 28	-0.849	-4.600					
Jan. 31	-0.920	-3.300		Jan. 31	-0.986	-8.500		Mar. 15	-0.233	-5.700					
Feb. 15	-0.828	-3.200		Feb. 15	-0.973	-9.300									
Feb. 28	-0.661	-5.300		Feb. 28	-0.905	-11.100									
Mar. 15	1.843	-6.200		Mar. 15	0.638	-9.100									



Table 54

DECEMBER OVER MARCH CHICAGO RYE, 1958 - 1967<sup>1</sup>

1958				1959				1960				1961			
Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.	
May 31	-0.780	-2.100		May 31	-0.856	-2.200		June 15	-1.012	-1.500		May 15	-1.022	-1.500	
June 15	-0.714	-1.000		June 15	-0.753	-1.900		June 30	-0.941	-2.300		May 31	-0.874	-4.300	
June 30	-0.653	-2.400		June 30	-0.613	-1.900		July 15	-0.914	-2.400		June 15	-0.815	-4.200	
July 15	-0.623	-2.100		July 15	-0.586	-1.800		July 31	-0.850	-3.200		June 30	-0.562	-4.800	
July 31	-0.543	-2.300		July 31	-0.573	-1.500		Aug. 15	-0.815	-4.000		July 15	-0.398	-2.600	
Aug. 15	-0.462	-2.100		Aug. 15	-0.460	-2.800		Aug. 31	-0.771	-4.600		July 31	-0.245	-4.600	
Aug. 31	-0.451	-1.900		Aug. 31	-0.406	-1.900		Sept. 15	-0.727	-4.700		Aug. 15	-0.195	-5.000	
Sept. 15	-0.444	-0.800		Sept. 15	-0.372	-2.100		Sept. 30	-0.698	-4.700		Aug. 31	-0.260	-4.300	
Sept. 30	-0.387	-1.400		Sept. 30	-0.219	-2.200		Oct. 15	-0.641	-4.900		Sept. 15	-0.156	-3.900	
Oct. 15	-0.327	-0.200		Oct. 15	-0.089	-3.300		Oct. 31	-0.426	-5.200		Sept. 30	-0.117	-3.200	
Oct. 31	-0.267	-0.300		Oct. 31	0.066	-2.400		Nov. 15	-0.113	-6.000		Oct. 15	0.042	-2.100	
Nov. 15	-0.197	-0.700		Nov. 15	0.363	-3.400		Nov. 30	0.786	-5.900		Oct. 31	0.170	1.200	
Nov. 30	-0.071	-0.500		Nov. 30	0.942	-3.300		Dec. 15	18.991	-5.500		Nov. 15	0.244	-0.200	
Dec. 15	0.686	1.000		Dec. 15	6.625	-4.400						Nov. 30	0.426	0.800	
												Dec. 15	1.954	2.900	

1962				1963				1964				1965			
Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.	
Apr. 15	-1.017	-2.600		Apr. 15	-1.037	-0.200		Apr. 15	-0.953	-2.300		May 15	-1.018	-2.000	
Apr. 30	-0.992	-1.300		Apr. 30	-1.005	-1.000		Apr. 30	-0.876	-2.800		May 31	-1.000	-2.100	
May 15	-0.930	-1.600		May 15	-1.010	-1.500		May 15	-0.818	-2.600		June 15	-0.938	-2.400	
May 31	-0.812	-0.700		May 31	-0.939	-1.600		May 31	-0.853	-2.300		June 30	-0.943	-2.900	
June 15	-0.742	-0.700		June 15	-0.893	-2.100		June 15	-0.871	-2.600		July 15	-0.862	-3.400	
June 30	-0.700	-2.300		June 30	-0.878	-2.000		June 30	-0.869	-2.600		July 31	-0.692	-2.900	
July 15	-0.637	-3.100		July 15	-0.851	-2.000		July 15	-0.835	-2.500		Aug. 15	-0.701	-3.000	
July 31	-0.631	-2.000		July 31	-0.830	-2.600		July 31	-0.767	-1.900		Aug. 31	-0.694	-3.300	
Aug. 15	-0.549	-2.100		Aug. 15	-0.782	-3.000		Aug. 15	-0.705	-1.400		Sept. 15	-0.632	-3.400	
Aug. 31	-0.572	-1.600		Aug. 31	-0.698	-2.500		Aug. 31	-0.616	-2.000		Sept. 30	-0.545	-4.000	
Sept. 15	-0.480	-1.500		Sept. 15	-0.523	-0.700		Sept. 15	-0.547	-2.300		Oct. 15	-0.315	-4.700	
Sept. 30	-0.425	-2.500		Sept. 30	-0.206	-2.800		Sept. 30	-0.400	-3.200		Oct. 31	-0.150	-4.100	
Oct. 15	-0.297	-1.500		Oct. 15	0.152	-3.000		Oct. 15	-0.028	-3.300		Nov. 15	0.017	-4.000	
Oct. 31	-0.255	-1.200		Oct. 31	0.337	-2.100		Oct. 31	0.118	-3.000		Nov. 30	0.875	-4.200	
Nov. 15	0.090	-2.300		Nov. 15	0.423	-3.600		Nov. 15	0.206	-3.100		Dec. 15	15.452	-3.200	
Nov. 30	1.139	-3.200		Nov. 30	1.310	-4.800		Nov. 30	1.957	-3.700					
Dec. 15	3.382	1.300		Dec. 15	9.607	-4.700		Dec. 15	15.881	-4.000					

1966				1967			
Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.	
Apr. 15	-0.902	-1.800		Apr. 15	-0.908	-3.300	
Apr. 30	-0.866	-2.700		Apr. 30	-0.800	-3.300	
May 15	-0.868	-3.000		May 15	-0.753	-3.800	
May 31	-0.794	-3.000		May 31	-0.715	-2.600	
June 15	-0.819	-3.300		June 15	-0.674	-3.900	
June 30	-0.675	-3.600		June 30	-0.694	-3.600	
July 15	-0.714	-4.300		July 15	-0.635	-2.800	
July 31	-0.716	-4.800		July 31	-0.658	-3.500	
Aug. 15	-0.582	-5.300		Aug. 15	-0.661	-4.500	
Aug. 31	-0.470	-5.700		Aug. 31	-0.695	-4.100	
Sept. 15	-0.366	-5.700		Sept. 15	-0.693	-4.700	
Sept. 30	-0.367	-5.700		Sept. 30	-0.575	-4.600	
Oct. 15	-0.370	-5.900		Oct. 15	-0.437	-4.500	
Oct. 31	-0.301	-5.400		Oct. 31	-0.279	-4.000	
Nov. 15	-0.167	-6.000		Nov. 15	-0.021	-4.100	
Nov. 30	1.774	-7.000		Nov. 30	1.929	-4.800	
Dec. 15	21.815	-5.800		Dec. 15	18.267	-3.500	

<sup>1</sup> This spread compares months traded in different calendar years; e.g., December 1958 over March 1959. The labels given for each spread refer to the calendar year in which December trades, thus the spread labeled 1958 compares December 1958 with March 1959. Also since data for 1969 were not available, only 10 spreads could be considered.





Table 55

MAY OVER JULY CHICAGO RYE, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Aug. 15	-1.050	2.800	Aug. 31	-1.036	5.000	Aug. 31	-1.033	7.300	Aug. 31	-1.067	4.700
Aug. 31	-1.061	5.700	Sept. 15	-1.047	6.300	Sept. 15	-1.003	9.100	Sept. 15	-1.048	3.600
Sept. 15	-1.050	6.500	Sept. 30	-1.035	7.100	Sept. 30	-0.897	6.200	Sept. 30	-1.045	4.000
Sept. 30	-1.030	6.500	Oct. 15	-1.020	9.800	Oct. 15	-0.767	4.800	Oct. 15	-1.040	3.900
Oct. 15	-1.012	5.000	Oct. 31	-0.944	7.600	Oct. 31	-0.727	5.500	Oct. 31	-0.985	1.700
Oct. 31	-1.005	5.800	Nov. 15	-0.883	5.600	Nov. 15	-0.711	6.800	Nov. 15	-0.944	0.200
Nov. 15	-0.999	6.100	Nov. 30	-0.892	6.000	Nov. 30	-0.702	6.300	Nov. 30	-0.935	0.500
Nov. 30	-0.998	7.500	Dec. 15	-0.855	5.700	Dec. 15	-0.664	6.000	Dec. 15	-0.908	0.300
Dec. 15	-0.976	8.600	Dec. 31	-0.816	6.500	Dec. 31	-0.663	4.500	Dec. 31	-0.835	-1.500
Dec. 31	-0.899	1.600	Jan. 15	-0.835	11.200	Jan. 15	-0.715	4.300	Jan. 15	-0.820	-1.400
Jan. 15	-0.931	10.800	Jan. 31	-0.795	10.300	Jan. 31	-0.706	3.500	Jan. 31	-0.813	-2.800
Jan. 31	-0.924	9.400	Feb. 15	-0.777	14.000	Feb. 15	-0.737	2.700	Feb. 15	-0.813	-2.500
Feb. 15	-0.872	7.500	Feb. 28	-0.793	16.100	Feb. 28	-0.727	0.700	Feb. 28	-0.816	-2.300
Feb. 28	-0.822	11.000	Mar. 15	-0.775	16.600	Mar. 15	-0.726	0.200	Mar. 15	-0.754	-2.000
Mar. 15	-0.836	15.100	Mar. 31	-0.707	17.100	Mar. 31	-0.678	-1.000	Mar. 31	-0.748	-3.000
Mar. 31	-0.862	14.500	Apr. 15	-0.558	11.700	Apr. 15	-0.660	0.500	Apr. 15	-0.626	-3.300
Apr. 15	-0.793	14.500	Apr. 30	-0.390	14.000	Apr. 30	-0.480	0.300	Apr. 30	-0.285	-3.700
Apr. 30	-0.725	14.800	May 15	0.020	8.700	May 15	0.082	0.500	May 15	4.890	-3.200
May 15	-0.561	19.600									
1962			1963			1964			1965		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Aug. 15	-1.046	3.700	Sept. 30	-1.040	5.500	Aug. 15	-1.032	4.000	Aug. 15	-0.972	2.500
Aug. 31	-1.030	2.000	Oct. 15	-1.006	4.000	Aug. 31	-0.980	4.800	Aug. 31	-0.970	3.700
Sept. 15	-1.012	1.600	Oct. 31	-0.989	3.800	Sept. 15	-0.962	7.500	Sept. 15	-0.975	4.000
Sept. 30	-0.985	4.000	Nov. 15	-0.968	4.100	Sept. 30	-0.962	12.000	Sept. 30	-0.914	3.000
Oct. 15	-0.977	5.200	Nov. 30	-0.964	3.200	Oct. 15	-0.896	7.700	Oct. 15	-0.831	0.800
Oct. 31	-0.969	6.500	Dec. 15	-0.940	3.000	Oct. 31	-0.912	8.800	Oct. 31	-0.866	-0.300
Nov. 15	-0.970	5.900	Dec. 31	-0.925	3.400	Nov. 15	-0.907	8.900	Nov. 15	-0.849	-0.100
Nov. 30	-0.917	7.000	Jan. 15	-0.887	3.300	Nov. 30	-0.875	4.600	Nov. 30	-0.828	-1.300
Dec. 15	-0.890	6.000	Jan. 31	-0.882	3.400	Dec. 15	-0.852	6.700	Dec. 15	-0.844	-1.200
Dec. 31	-0.863	6.300	Feb. 15	-0.860	3.500	Dec. 31	-0.846	5.400	Dec. 31	-0.852	0.800
Jan. 15	-0.855	4.300	Feb. 28	-0.860	4.500	Jan. 15	-0.837	6.800	Jan. 15	-0.852	-0.900
Jan. 31	-0.844	6.600	Mar. 15	-0.831	2.800	Jan. 31	-0.829	6.700	Jan. 31	-0.849	-1.200
Feb. 15	-0.837	5.500	Mar. 31	-0.778	0.200	Feb. 15	-0.850	7.100	Feb. 15	-0.839	-1.900
Feb. 28	-0.814	4.700	Apr. 15	-0.745	1.700	Feb. 28	-0.826	2.500	Feb. 28	-0.859	-1.900
Mar. 15	-0.826	4.700	Apr. 30	-0.583	-0.500	Mar. 15	-0.835	1.000	Mar. 15	-0.881	-1.300
Mar. 31	-0.763	1.200	May 15	-0.341	0.500	Mar. 31	-0.892	1.000	Mar. 31	-0.856	-1.900
Apr. 15	-0.711	0.500				Apr. 15	-0.754	0.100	Apr. 15	-0.812	-1.700
Apr. 30	-0.557	-1.500				Apr. 30	-0.576	-0.900	Apr. 30	-0.596	-1.100
May 15	0.684	-2.300				May 15	0.396	-0.100	May 15	0.123	-1.300
1966			1967			1968					
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.			
Aug. 15	-0.882	2.500	Aug. 15	-1.021	4.700	Aug. 31	-1.033	0.200			
Aug. 31	-0.798	1.800	Aug. 31	-0.995	1.200	Sept. 15	-1.028	-0.400			
Sept. 15	-0.781	1.600	Sept. 15	-0.965	-1.000	Sept. 30	-1.021	-0.300			
Sept. 30	-0.723	1.000	Sept. 30	-0.946	-0.200	Oct. 15	-1.012	-1.000			
Oct. 15	-0.823	0.800	Oct. 15	-0.953	-0.500	Oct. 31	-1.011	-0.600			
Oct. 31	-0.832	0.400	Oct. 31	-0.964	-0.300	Nov. 15	-0.995	-1.100			
Nov. 15	-0.864	-0.300	Nov. 15	-0.967	-1.100	Nov. 30	-0.973	-2.100			
Nov. 30	-0.837	-0.900	Nov. 30	-0.964	-2.600	Dec. 15	-0.961	-2.400			
Dec. 15	-0.821	-1.000	Dec. 15	-0.966	-2.000	Dec. 31	-0.956	-2.000			
Dec. 31	-0.808	-0.900	Dec. 31	-0.941	-2.100	Jan. 15	-0.961	-1.300			
Jan. 15	-0.835	-0.500	Jan. 15	-0.938	-2.400	Jan. 31	-0.916	-1.000			
Jan. 31	-0.863	-1.200	Jan. 31	-0.936	-1.700	Feb. 15	-0.912	-1.100			
Feb. 15	-0.845	-1.000	Feb. 15	-0.926	-2.400	Feb. 28	-0.912	-1.500			
Feb. 28	-0.849	-1.700	Feb. 28	-0.891	-2.800	Mar. 15	-0.869	-2.300			
Mar. 15	-0.841	-2.000	Mar. 15	-0.868	-2.800	Mar. 31	-0.858	-2.400			
Mar. 31	-0.813	-2.500	Mar. 31	-0.746	-3.700	Apr. 15	-0.818	-2.300			
Apr. 15	-0.728	-2.800	Apr. 15	-0.566	-3.700	Apr. 30	-0.232	-3.100			
Apr. 30	-0.370	-2.800	Apr. 30	0.154	-3.900	May 15	4.188	-1.900			
May 15	3.604	-2.000	May 15	11.433	-0.400						



Table 56

1958			
	Date	DI	Spread c/bu.
Dec.	15	-1.114	6.500
Dec.	31	-1.114	9.100
Jan.	15	-1.079	8.300
Jan.	31	-1.059	7.000
Feb.	15	-1.014	4.900
Feb.	28	-1.022	8.400
Mar.	15	-1.058	13.000
Mar.	31	-1.057	12.900
Apr.	15	-1.985	12.600
Apr.	30	-0.860	13.500
May	15	-0.635	19.300

1959		DI	Spread ¢/bu.
Date			
Dec.	31	-1.102	5.300
Jan.	15	-1.120	10.200
Jan.	31	-1.103	9.500
Feb.	15	-1.110	14.300
Feb.	28	-1.047	17.500
Mar.	15	-1.046	20.200
Mar.	31	-0.988	20.900
Apr.	15	-0.815	13.200
Apr.	30	-0.687	16.000
May	15	-0.369	10.900

1960			
Date		DI	Spread c/bu.
Nov.	30	-1.107	7.500
Dec.	15	-1.074	6.700
Dec.	31	-1.011	3.500
Jan.	15	-0.974	3.000
Jan.	31	-0.958	2.500
Feb.	15	-0.924	1.800
Feb.	28	-0.873	-0.700
Mar.	15	-0.855	-0.800
Mar.	31	-0.789	-3.200
Apr.	15	-0.720	-0.900
Apr.	30	-0.551	-1.500
May	15	-0.082	0.500

1961		DI	Spread c/bu.
Date			
Dec.	31	-1.036	-2.800
Jan.	15	-1.013	-3.900
Jan.	31	-0.962	-5.600
Feb.	15	-0.940	-5.500
Feb.	28	-0.908	-5.800
Mar.	15	-0.899	-4.600
Mar.	31	-0.903	-4.800
Apr.	15	-0.852	-5.600
Apr.	30	-0.699	-7.000
May	15	2.428	-7.000

1962			
Date	DI	Spread ¢/bu.	
Dec. 15	-1.092	5.300	
Dec. 31	-1.069	6.800	
Jan. 15	-1.020	4.700	
Jan. 31	-1.025	6.500	
Feb. 15	-1.001	5.500	
Feb. 28	-0.991	4.700	
Mar. 15	-0.979	4.500	
Mar. 31	-0.926	0.200	
Apr. 15	-0.866	-1.500	
Apr. 30	-0.749	-3.800	
May 15	-0.112	-4.300	

1963			
Date	DI	Spread ¢/bu.	
Dec. 31	-1.093	3.700	
Jan. 15	-1.091	4.000	
Jan. 31	-1.083	4.900	
Feb. 15	-1.047	3.500	
Feb. 28	-1.053	4.500	
Mar. 15	-1.028	2.000	
Mar. 31	-0.986	-0.300	
Apr. 15	-0.978	0.700	
Apr. 30	-0.907	-0.700	
May 15	-0.760	0.800	

1964			
Date		DI	Spread c/bu.
Dec.	15	-1.092	8.600
Dec.	31	-1.070	6.300
Jan.	15	-0.060	8.300
Jan.	31	-1.059	9.600
Feb.	15	-1.053	8.400
Feb.	28	-1.018	3.600
Mar.	15	-0.984	1.400
Mar.	31	-0.957	1.700
Apr.	15	-0.882	0.700
Apr.	30	-0.766	-1.700
May	15	-0.213	-1.100

1965			
Date	DI	Spread	¢/bu.
Dec. 31	-1.061	0.200	
Jan. 15	-1.026	-1.900	
Jan. 31	-1.028	-2.000	
Feb. 15	-1.009	-3.000	
Feb. 28	-1.004	-3.000	
Mar. 15	-1.007	-2.800	
Mar. 31	-0.996	-3.700	
Apr. 15	-0.983	-3.100	
Apr. 30	-0.890	-2.300	
May 15	-0.410	-2.100	

1966		DI	Spread ¢/bu.
Date			
Oct.	15	-1.039	0.500
Oct.	31	-1.031	-0.200
Nov.	15	-1.028	-1.000
Nov.	30	-0.981	-1.700
Dec.	15	-0.969	-2.000
Dec.	31	-0.959	-2.000
Jan.	15	-0.969	-0.300
Jan.	31	-0.972	-2.000
Feb.	15	-0.964	-1.200
Feb.	28	-0.955	-2.800
Mar.	15	-0.948	-3.200
Mar.	31	-0.910	-4.000
Apr.	15	-0.885	-4.000
Apr.	30	-0.786	-5.500
May	15	1.315	-4.900

1967		DI	Spread ¢/bu.
Date			
Oct.	15	-1.042	-1.500
Oct.	31	-1.043	-0.800
Nov.	15	-1.029	-2.600
Nov.	30	-1.028	-4.200
Dec.	15	-1.010	-4.000
Dec.	31	-0.994	-4.300
Jan.	15	-0.980	-5.400
Jan.	31	-0.990	-4.500
Feb.	15	-0.983	-5.400
Feb.	28	-0.961	-6.000
Mar.	15	-0.961	-5.900
Mar.	31	-0.918	-6.500
Apr.	15	-0.884	-6.900
Apr.	30	-0.654	-6.800
May	15	2.823	-3.000

1968			
Date	DI	Spread	¢/bu.
Nov. 30	-1.022	-4.000	
Dec. 15	-1.029	-2.900	
Dec. 31	-1.007	-4.200	
Jan. 15	-0.991	-2.800	
Jan. 31	-0.969	-2.300	
Feb. 15	-0.958	-1.900	
Feb. 28	-0.939	-2.700	
Mar. 15	-0.958	-3.500	
Mar. 31	-0.954	-4.100	
Apr. 15	-0.937	-3.500	
Apr. 30	-0.743	-4.800	
May 15	0.801	-4.000	



Table 57

MAY OVER DECEMBER CHICAGO RYE, 1958 - 1968

1958				1959				1960				1961			
Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.	
Feb. 28	-1.106	3,900		Mar. 31	-1.176	17.600		Jan. 31	-1.091	0.500		Feb. 28	-1.029	-6.800	
Mar. 15	-1.118	8,500		Apr. 15	-0.997	9.700		Feb. 15	-1.062	0.500		Mar. 15	-0.983	-7.100	
Mar. 31	-1.099	8,600		Apr. 30	-0.835	12.300		Feb. 28	-1.006	-3.000		Mar. 31	-0.773	-7.800	
Apr. 15	-1.014	8,800		May 15	-0.440	6.900		Mar. 15	-0.960	-3.000		Apr. 15	-0.589	-9.400	
Apr. 30	-0.819	9,300						Mar. 31	-0.872	-6.500		Apr. 30	-0.139	-11.200	
May 15	-0.463	16,700						Apr. 15	-0.640	-3.000		May 15	7.760	-12.000	
								Apr. 30	-0.279	-3.500					
								May 15	0.855	-1.000					
1962				1963				1964				1965			
Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.	
Jan. 15	-1.054	2,500		Feb. 28	-1.094	3,000		Jan. 31	-1.111	5.400		Jan. 15	-1.038	-3.900	
Jan. 31	-1.018	4,100		Mar. 15	-1.047	0.500		Feb. 15	-1.066	5.600		Jan. 31	-1.007	-4.700	
Feb. 15	-0.992	3,000		Mar. 31	-0.974	-1.800		Feb. 28	-1.016	0.100		Feb. 15	-0.965	-5.500	
Feb. 28	-0.912	2,300		Apr. 15	-0.912	-1.100		Mar. 15	-0.952	-1.400		Feb. 28	-0.947	-5.600	
Mar. 15	-0.905	1,000		Apr. 30	-0.716	-2.600		Mar. 31	-0.861	-0.800		Mar. 15	-0.926	-4.900	
Mar. 31	-0.841	-2,600		May 15	-0.054	-1.500		Apr. 15	-0.751	-3.200		Mar. 31	-0.863	-6.600	
Apr. 15	-0.688	-3,900						Apr. 30	-0.530	-4.700		Apr. 15	-0.807	-5.700	
Apr. 30	-0.432	-6,500						May 15	1.250	-4.300		Apr. 30	-0.484	-5.100	
May 15	0.890	-7,200										May 15	0.524	-4.700	
1966				1967				1968							
Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.		Date	DI	Spread ¢/bu.					
Jan. 15	-0.976	-2,300		Jan. 15	-0.947	-9.100		Jan. 15	-0.999	-6.000					
Jan. 31	-0.921	-5,000		Jan. 31	-0.911	-8,000		Jan. 31	-0.980	-6.300					
Feb. 15	-0.874	-4,200		Feb. 15	-0.877	-9,400		Feb. 15	-0.986	-5,400					
Feb. 28	-0.845	-5,800		Feb. 28	-0.852	-10,800		Feb. 28	-0.925	-6,200					
Mar. 15	-0.808	-7,200		Mar. 15	-0.831	-9,800		Mar. 15	-0.802	-7,300					
Mar. 31	-0.774	-7,700		Mar. 31	-0.751	-10,500		Mar. 31	-0.737	-8,100					
Apr. 15	-0.699	-7,800		Apr. 15	-0.625	-10,900		Apr. 15	-0.648	-7,500					
Apr. 30	-0.290	-9,300		Apr. 30	-0.200	-11,500		Apr. 30	-0.140	-9,000					
May 15	5.692	-8,400		May 15	7.097	-6,700		May 15	3.476	-8,400					



Table 58

JULY OVER SEPTEMBER CHICAGO RYE, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Dec. 15	-0.969	-2.100	Dec. 31	-0.991	-1.200	Nov. 30	-1.001	1.200	Dec. 31	-1.001	-1.300
Dec. 31	-0.850	7.500	Jan. 15	-0.910	-1.000	Dec. 15	-0.940	0.700	Jan. 15	-0.931	-2.500
Jan. 15	-0.700	-2.500	Jan. 31	-0.896	-0.800	Dec. 31	-0.835	-1.000	Jan. 31	-0.754	-2.800
Jan. 31	-0.642	-2.400	Feb. 15	-0.827	0.300	Jan. 15	-0.713	-1.300	Feb. 15	-0.644	-3.000
Feb. 15	-0.612	-2.600	Feb. 28	-0.598	1.400	Jan. 31	-0.684	-1.000	Feb. 28	-0.495	-3.500
Feb. 28	-0.640	-2.600	Mar. 15	-0.577	3.600	Feb. 15	-0.561	-0.900	Mar. 15	-0.559	-2.600
Mar. 15	-0.659	-2.100	Mar. 31	-0.527	3.800	Feb. 28	-0.455	-1.400	Mar. 31	-0.577	-1.800
Mar. 31	-0.609	-1.600	Apr. 15	-0.436	1.500	Mar. 15	-0.397	-1.000	Apr. 15	-0.598	-2.300
Apr. 15	-0.517	-1.900	Apr. 30	-0.393	2.000	Mar. 31	-0.327	-2.200	Apr. 30	-0.595	-3.300
Apr. 30	-0.305	-1.300	May 15	-0.370	2.200	Apr. 15	-0.162	-1.400	May 15	-0.436	-3.800
May 15	-0.124	-0.300	May 31	-0.307	1.600	Apr. 30	-0.148	-1.800	May 31	-0.297	-3.700
May 31	0.160	-2.000	June 15	-0.106	1.400	May 15	-0.176	0.000	June 15	0.113	-4.000
June 15	0.454	-1.900	June 30	0.198	0.000	May 31	-0.090	-0.600	June 30	2.622	-4.300
June 30	1.156	-2.300	July 15	1.516	-1.000	June 15	0.168	-1.100	July 15	20.425	-2.200
July 15	2.989	-1.500				June 30	1.101	-2.000			
						July 15	5.524	-2.700			
1962			1963			1964			1965		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Dec. 15	-0.976	-0.700	Dec. 31	-1.025	0.300	Dec. 15	-0.944	1.900	Dec. 31	-1.018	-0.600
Dec. 31	-0.818	0.500	Jan. 15	-1.013	0.700	Dec. 31	-0.908	0.900	Jan. 15	-0.911	-1.000
Jan. 15	-0.664	0.400	Jan. 31	-0.942	1.500	Jan. 15	-0.830	1.500	Jan. 31	-0.928	-0.800
Jan. 31	-0.673	-0.100	Feb. 15	-0.824	0.000	Jan. 31	-0.787	2.900	Feb. 15	-0.869	-1.100
Feb. 15	-0.609	0.00	Feb. 28	-0.825	0.000	Feb. 15	-0.763	1.300	Feb. 28	-0.824	-1.100
Feb. 28	-0.625	0.00	Mar. 15	-0.810	-0.800	Feb. 28	-0.742	1.100	Mar. 15	-0.802	-1.500
Mar. 15	-0.558	0.200	Mar. 31	-0.754	-0.500	Mar. 15	-0.624	0.400	Mar. 31	-0.808	-1.800
Mar. 31	-0.552	-1.000	Apr. 15	-0.739	-1.000	Mar. 31	-0.285	0.700	Apr. 15	-0.773	-1.400
Apr. 15	-0.476	-2.000	Apr. 30	-0.710	-0.200	Apr. 15	-0.405	0.200	Apr. 30	-0.675	-1.200
Apr. 30	-0.428	-2.300	May 15	-0.606	0.300	Apr. 30	-0.421	-0.800	May 15	-0.489	-0.800
May 15	-0.493	-2.000	May 31	-0.479	0.300	May 15	-0.453	-1.000	May 31	-0.489	-2.200
May 31	-0.457	2.500	June 15	-0.411	-1.000	May 31	-0.426	-1.700	June 15	-0.296	-3.000
June 15	-0.194	6.300	June 30	-0.017	-2.400	June 15	-0.269	-2.300	June 30	1.377	-3.600
June 30	0.128	2.500	July 15	1.095	-2.800	June 30	0.365	-1.100	July 15	17.527	-3.000
July 15	1.644	3.500				July 15	1.627	-1.000			
1966			1967			1968					
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.			
Oct. 15	-0.913	-0.300	Oct. 15	-0.961	-1.000	Nov. 30	-0.867	-1.900			
Oct. 31	-0.895	-0.600	Oct. 31	-0.884	-0.500	Dec. 15	-0.854	-0.500			
Nov. 15	-0.881	-0.700	Nov. 15	-0.864	-1.500	Dec. 31	-0.706	-2.200			
Nov. 30	-0.684	-0.800	Nov. 30	-0.686	-1.600	Jan. 15	-0.297	-1.500			
Dec. 15	-0.670	-1.000	Dec. 15	-0.719	-2.000	Jan. 31	-0.379	-1.300			
Dec. 31	-0.648	-1.100	Dec. 31	-0.630	-2.200	Feb. 15	-0.273	-0.800			
Jan. 15	-0.607	0.200	Jan. 15	-0.554	-3.000	Feb. 28	-0.147	-1.200			
Jan. 31	-0.599	-0.800	Jan. 31	-0.622	-2.800	Mar. 15	-0.529	-1.200			
Feb. 15	-0.578	-0.200	Feb. 15	-0.646	-3.000	Mar. 31	-0.564	-1.700			
Feb. 28	-0.556	-1.100	Feb. 28	-0.650	-4.100	Apr. 15	-0.546	-1.200			
Mar. 15	-0.438	-1.200	Mar. 15	-0.662	-3.100	Apr. 30	-0.671	-1.700			
Mar. 31	-0.455	-1.700	Mar. 31	-0.675	-2.800	May 15	-0.676	-2.100			
Apr. 15	-0.547	-1.800	Apr. 15	-0.740	-3.200	May 31	-0.581	-2.500			
Apr. 30	-0.663	-2.700	Apr. 30	-0.716	-2.900	June 15	-0.492	-2.300			
May 15	-0.518	-2.900	May 15	-0.712	-2.600	June 30	0.876	-2.200			
May 31	-0.324	-3.800	May 31	-0.636	-2.600	July 15	6.924	2.100			
June 15	0.184	-3.900	June 15	0.019	-3.000						
June 30	1.318	-3.900	June 30	2.198	-4.200						
July 15	7.166	-3.300	July 15	31.855	-3.200						





Table 59

JULY OVER DECEMBER CHICAGO RYE, 1958 - 1968

1958			
Date	DI	Spread ¢/bu.	
Feb. 28	-0.936	-7.100	
Mar. 15	-0.869	-6.600	
Mar. 31	-0.778	-5.900	
Apr. 15	-0.616	-5.700	
Apr. 30	-0.248	-5.500	
May 15	0.115	-2.900	
May 31	1.080	-5.800	
June 15	2.626	-3.700	
June 30	4.101	-4.600	
July 15	10.472	-4.500	

1959			
Date	DI	Spread	¢/bu.
Mar. 31	-0.925	0.500	
Apr. 15	-0.758	-2.000	
Apr. 30	-0.595	-1.700	
May 15	-0.444	-1.800	
May 31	-0.242	-2.300	
June 15	0.368	-1.500	
June 30	0.806	-3.300	
July 15	4.230	-4.500	

1960			
Date	DI	Spread c/bu.	
Jan. 31	-1.031	-3.000	
Feb. 15	-0.949	-2.200	
Feb. 28	-0.856	-3.700	
Mar. 15	-0.716	-3.200	
Mar. 31	-0.571	-5.500	
Apr. 15	0.035	-3.500	
Apr. 30	0.310	-3.800	
May 15	0.608	-1.500	
May 31	0.638	-2.200	
June 15	1.019	-3.100	
June 30	3.119	-5.400	
July 15	11.408	-6.200	

1961			
Date	DI	Spread	c/bu.
Feb. 28	-1.019	-4.500	
Mar. 15	-0.861	-5.100	
Mar. 31	-0.115	-4.800	
Apr. 15	0.040	-6.100	
Apr. 30	0.138	-7.500	
May 15	0.436	-8.800	
May 31	1.088	-9.900	
June 15	2.145	-10.000	
June 30	9.429	-10.000	
July 15	52.889	-6.400	

1962		DI	Spread ¢/bu.
Date			
Jan.	15	-0.794	-1.800
Jan.	31	-0.635	-2.500
Feb.	15	-0.570	-2.500
Feb.	28	-0.323	-2.400
Mar.	15	-0.296	-3.700
Mar.	31	-0.268	-3.800
Apr.	15	0.042	-4.400
Apr.	30	0.218	-5.000
May	15	0.063	-4.900
May	31	0.330	1.500
June	15	1.111	6.700
June	30	1.351	2.400
July	15	4.254	2.100

1963		DI	Spread c/bu.
Date			
Feb.	28	-0.963	-1.500
Mar.	15	-0.849	-2.300
Mar.	31	-0.677	-2.000
Apr.	15	-0.517	-2.800
Apr.	30	-0.295	-2.100
May	15	0.358	-2.000
May	31	1.239	-2.400
June	15	2.296	-5.200
June	30	4.976	-5.300
July	15	13.452	-6.300

1964			
Date		DI	Spread c/bu.
Jan.	31	-1.019	-1.300
Feb.	15	-0.817	-1.500
Feb.	28	-0.754	-2.400
Mar.	15	-0.479	-2.400
Mar.	31	0.340	-1.800
Apr.	15	0.017	-3.300
Apr.	30	0.068	-3.800
May	15	0.518	-4.200
May	31	0.882	-5.200
June	15	1.479	-6.200
June	30	3.065	-5.300
July	15	7.368	-4.400

1965			
Date	DI	Spread	¢/bu.
Jan. 15	-0.941	-3.000	
Jan. 31	-0.808	-3.500	
Feb. 15	-0.622	-3.600	
Feb. 28	-0.473	-3.700	
Mar. 15	-0.232	-3.600	
Mar. 31	-0.034	-4.700	
Apr. 15	0.037	-4.000	
Apr. 30	0.219	-4.000	
May 15	0.281	-3.400	
May 31	0.805	-5.000	
June 15	1.538	-5.600	
June 30	6.615	-7.600	
July 15	66.473	-7.000	

1966		DI	Spread ¢/bu.
Date			
Jan.	15	-0.629	-1.800
Jan.	31	-0.317	-3.800
Feb.	15	-0.115	-3.200
Feb.	28	0.030	-4.100
Mar.	15	0.147	-5.200
Mar.	31	0.153	-5.200
Apr.	15	0.065	-5.000
Apr.	30	0.064	-6.500
May	15	0.386	-6.400
May	31	0.895	-7.800
June	15	2.373	-7.900
June	30	5.712	-9.700
July	15	36.296	-9.000

1967			
Date	DI	Spread	¢/bu.
Jan. 15	-0.230	-6.700	
Jan. 31	0.195	-6.300	
Feb. 15	0.383	-7.000	
Feb. 28	0.138	-8.000	
Mar. 15	0.148	-7.000	
Mar. 31	-0.085	-6.800	
Apr. 15	-0.191	-7.200	
Apr. 30	-0.342	-7.600	
May 15	-0.383	-6.300	
May 31	0.146	-7.000	
June 15	1.432	-7.000	
June 30	5.743	-8.900	
July 15	79.487	-8.000	

1968		
Date	DI	Spread ¢/bu.
Jan. 15	-0.448	-4.700
Jan. 31	-0.550	-5.300
Feb. 15	-0.559	-4.300
Feb. 28	-0.073	-4.700
Mar. 15	0.428	-5.000
Mar. 31	0.682	-5.700
Apr. 15	0.791	-5.200
Apr. 30	0.062	-5.900
May 15	-0.179	-6.500
May 31	-0.120	-6.400
June 15	0.282	-6.000
June 30	2.201	-6.100
July 15	12.530	-1.000



Table 60  
SEPTEMBER OVER DECEMBER CHICAGO RYE, 1958 - 1968

1958			1959			1960			1961		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Feb. 28	-0.833	-4.500	Mar. 31	-0.759	-3.300	Jan. 31	-1.014	-2.000	Feb. 28	-1.030	-1.000
Mar. 15	-0.628	-4.500	Apr. 15	-0.553	-3.500	Feb. 15	-0.835	-1.300	Mar. 15	-0.680	-2.500
Mar. 31	-0.449	-4.300	Apr. 30	-0.334	-3.700	Feb. 28	-0.723	-2.300	Mar. 31	1.010	-3.000
Apr. 15	-0.228	-3.800	May 15	-0.136	-4.000	Mar. 15	-0.524	-2.200	Apr. 15	1.479	-3.800
Apr. 30	0.048	-4.200	May 31	0.057	-3.900	Mar. 31	-0.379	-3.300	Apr. 30	1.726	-4.200
May 15	0.236	-2.600	June 15	0.478	-2.900	Apr. 15	0.204	-2.100	May 15	1.492	-5.000
May 31	0.755	-3.800	June 30	0.467	-3.300	Apr. 30	0.500	-2.000	May 31	1.916	-6.200
June 15	1.446	-1.800	July 15	1.045	-3.500	May 15	0.889	-1.500	June 15	1.796	-6.000
June 30	1.327	-2.300	July 31	2.092	-3.600	May 31	0.748	-1.600	June 30	1.870	-5.700
July 15	1.861	-3.000	Aug. 15	4.337	-4.500	June 15	0.685	-2.000	July 15	1.499	-4.200
July 31	2.004	-4.400	Aug. 31	6.388	-4.700	June 30	0.927	-3.400	July 31	2.006	-5.000
Aug. 15	2.879	-3.700	Sept. 15	10.217	-2.900	July 15	0.877	-3.500	Aug. 15	3.381	-5.000
Aug. 31	5.373	-3.800				July 31	1.054	-4.600	Aug. 31	7.086	-5.200
Sept. 15	13.568	-0.600				Aug. 15	2.656	-5.000	Sept. 15	18.414	-4.700
						Aug. 31	5.715	-5.900			
						Sept. 15	31.138	-4.800			

1962			1963			1964			1965		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Jan. 15	-0.359	-2.200	Feb. 28	-0.629	-1.500	Jan. 31	-0.917	-4.200	Jan. 15	-0.218	-2.000
Jan. 31	0.088	-2.400	Mar. 15	-0.157	-1.500	Feb. 15	-0.209	-2.800	Jan. 31	1.166	-2.700
Feb. 15	0.074	-2.500	Mar. 31	0.282	-1.500	Feb. 28	-0.073	-3.500	Feb. 15	1.556	-2.500
Feb. 28	0.715	-2.400	Apr. 15	0.773	-1.800	Mar. 15	0.330	-2.800	Feb. 28	1.709	-2.600
Mar. 15	0.520	-3.500	Apr. 30	1.271	-1.900	Mar. 31	0.806	-2.500	Mar. 15	2.558	-2.100
Mar. 31	0.572	-2.800	May 15	2.207	-2.300	Apr. 15	0.640	-3.500	Mar. 31	3.579	-2.900
Apr. 15	0.933	-2.400	May 31	3.046	-2.700	Apr. 30	0.781	-3.000	Apr. 15	3.175	-2.600
Apr. 30	1.075	-2.700	June 15	4.356	-4.200	May 15	1.659	-3.200	Apr. 30	2.508	-2.800
May 15	1.032	-2.900	June 30	4.966	-2.900	May 31	2.163	-3.500	May 15	1.394	-2.600
May 31	1.299	-1.000	July 15	5.839	-3.500	June 15	2.308	-3.900	May 31	2.416	-2.800
June 15	1.445	0.400	July 31	5.139	-3.000	June 30	1.917	-4.200	June 15	2.535	-2.600
June 30	1.006	-0.100	Aug. 15	6.887	-3.300	July 15	2.139	-3.400	June 30	2.174	-4.000
July 15	0.929	-1.400	Aug. 31	14.941	-5.100	July 31	2.782	-2.500	July 15	2.622	-4.000
July 31	0.989	-0.300	Sept. 15	29.078	-3.400	Aug. 15	3.775	-1.100	July 31	3.034	-4.300
Aug. 15	1.241	1.400				Aug. 31	6.875	-2.500	Aug. 15	5.299	-4.400
Aug. 31	2.112	-1.500				Sept. 15	23.087	-2.400	Aug. 31	12.936	-5.000
Sept. 15	6.135	-0.900							Sept. 15	83.339	-4.600

1966			1967			1968		
Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.	Date	DI	Spread ¢/bu.
Jan. 15	-0.062	-2.000	Jan. 15	0.679	-3.700	Jan. 15	-0.233	-3.200
Jan. 31	0.633	-3.000	Jan. 31	2.054	-3.500	Jan. 31	-0.294	-4.000
Feb. 15	0.996	-3.000	Feb. 15	2.773	-4.000	Feb. 15	-0.403	-3.500
Feb. 28	1.224	-3.000	Feb. 28	2.197	-3.900	Feb. 28	0.058	-3.500
Mar. 15	0.965	-4.000	Mar. 15	2.282	-3.900	Mar. 15	1.892	-3.800
Mar. 31	1.045	-3.500	Mar. 31	1.703	-4.000	Mar. 31	2.679	-4.000
Apr. 15	1.266	-3.200	Apr. 15	1.985	-4.000	Apr. 15	2.731	-4.000
Apr. 30	2.029	-3.800	Apr. 30	1.198	-4.700	Apr. 30	2.024	-4.200
May 15	1.795	-3.500	May 15	1.046	-3.700	May 15	1.391	-4.400
May 31	1.761	-4.000	May 31	2.019	-4.400	May 31	1.021	-3.900
June 15	1.819	-4.000	June 15	1.345	-4.000	June 15	1.433	-3.700
June 30	1.881	-5.800	June 30	1.093	-4.700	June 30	0.675	-3.900
July 15	3.559	-5.700	July 15	1.439	-4.800	July 15	0.676	-3.100
July 31	4.325	-5.200	July 31	2.098	-5.000	July 31	1.232	-1.700
Aug. 15	5.226	-5.700	Aug. 15	3.028	-5.500	Aug. 15	2.143	-2.000
Aug. 31	15.968	-7.000	Aug. 31	10.138	-4.500	Aug. 31	4.120	-1.900
Sept. 15	122.229	-6.300	Sept. 15	185.744	-5.000	Sept. 15	20.254	0.700



FIGURE 1

## WHEAT REGRESSION

$$\hat{Y} = -.1122 - .1666X$$

$$(.0223)$$

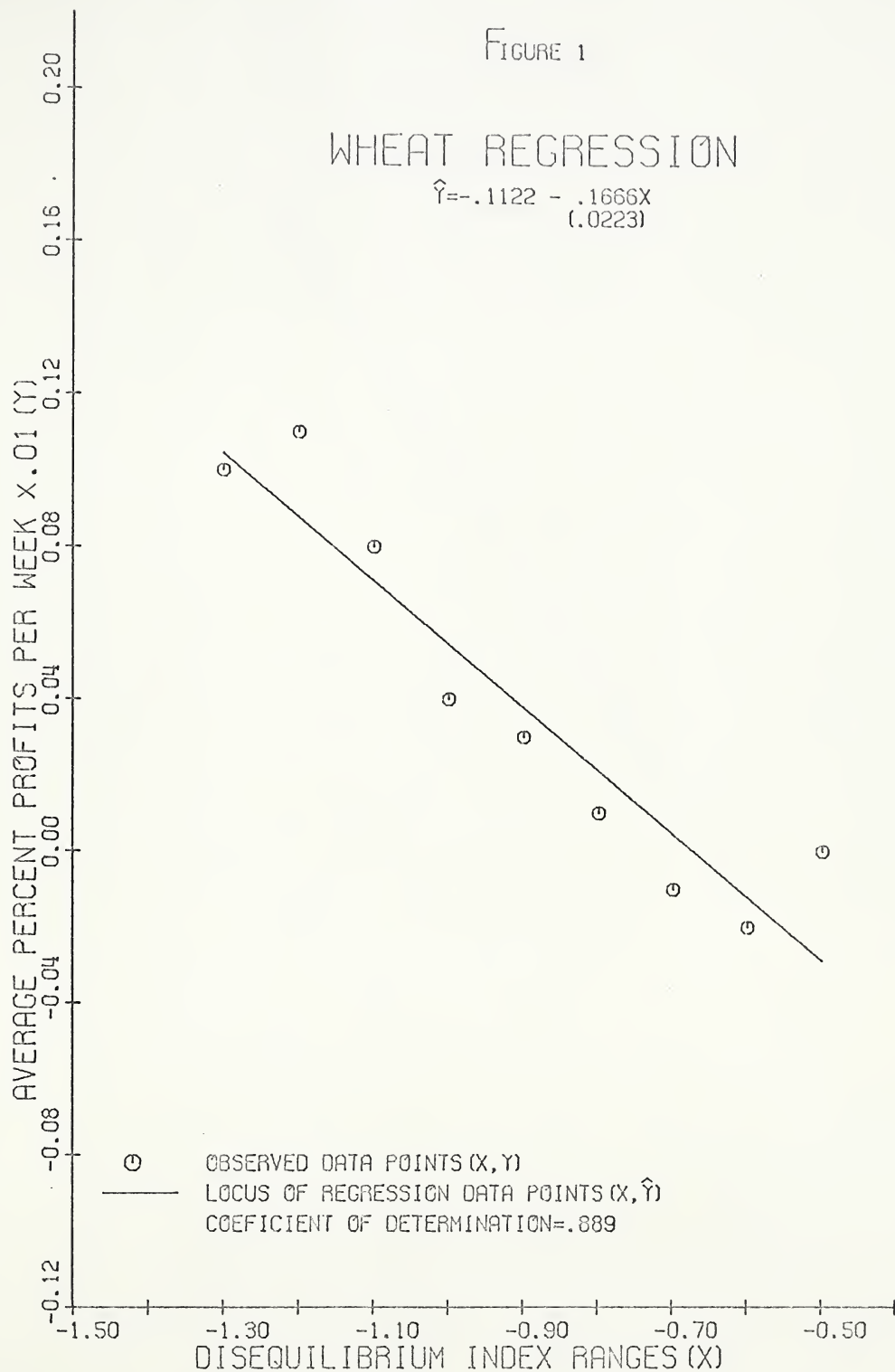




FIGURE 2

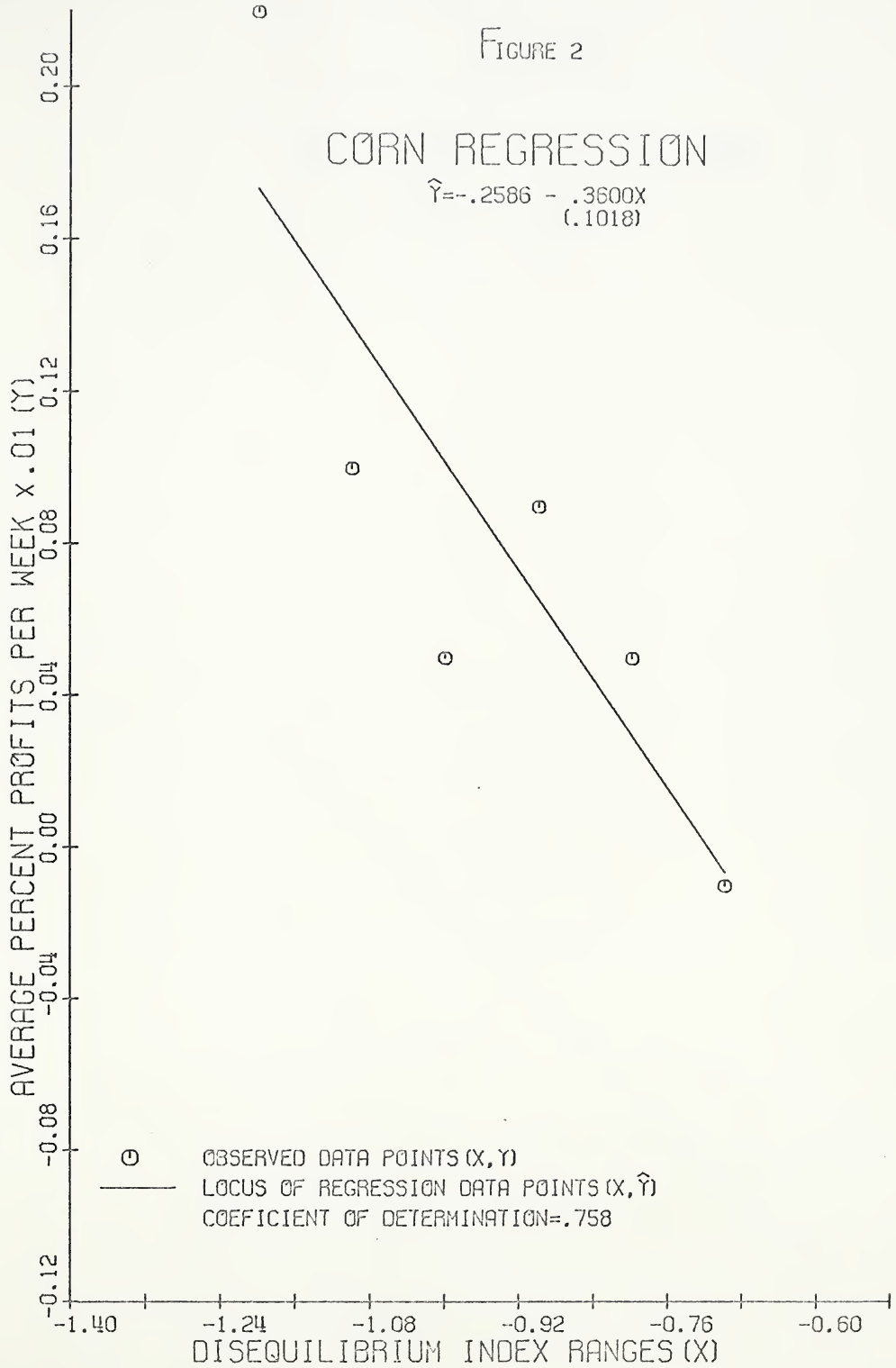






FIGURE 3

## SOYBEAN REGRESSION

$$\hat{Y} = -.3486 - .4929X$$

(.1735)

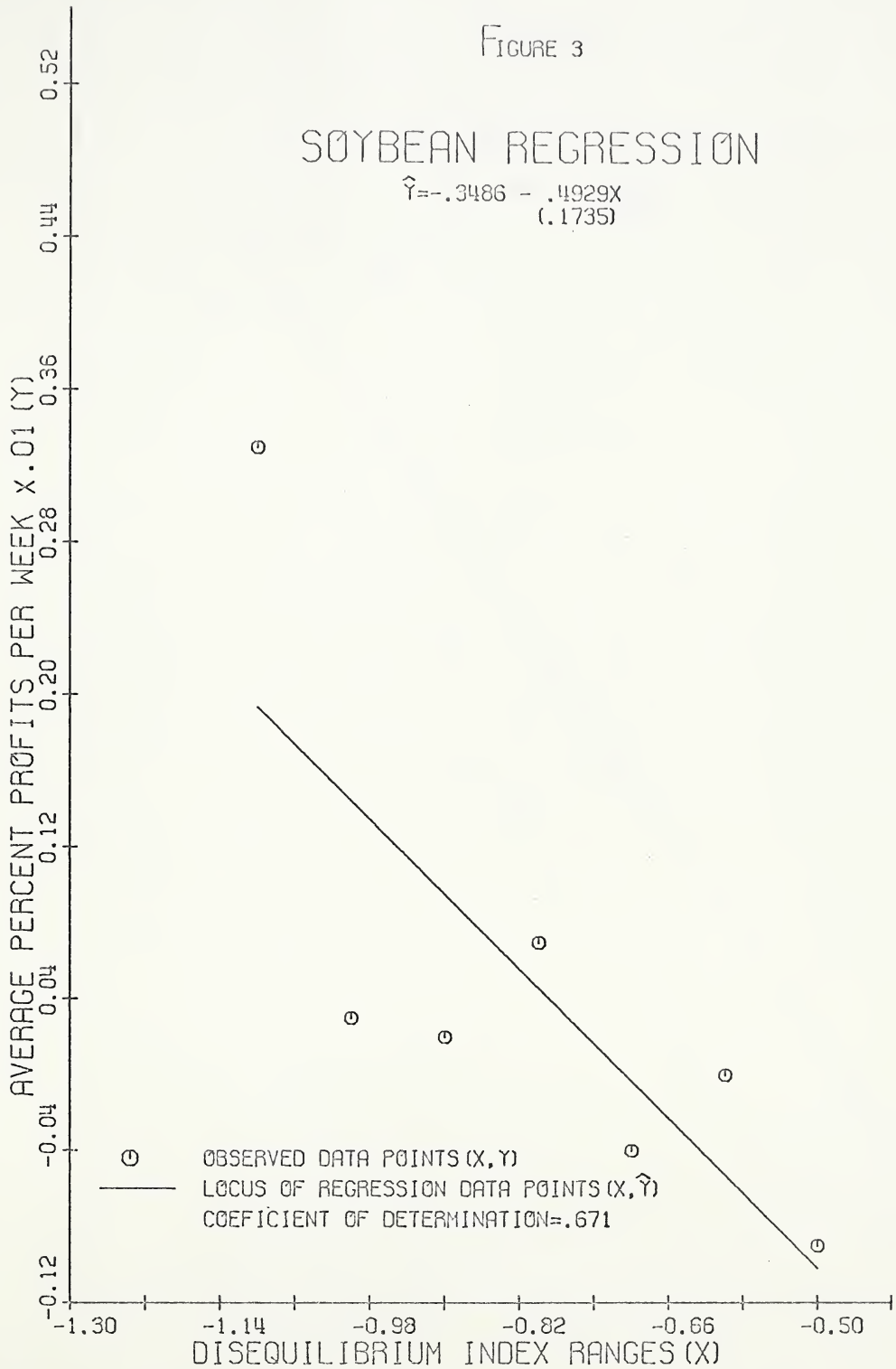




FIGURE 4

## RYE REGRESSION

$$\hat{Y} = -.1870 - .2697X$$

$$(.0556)$$

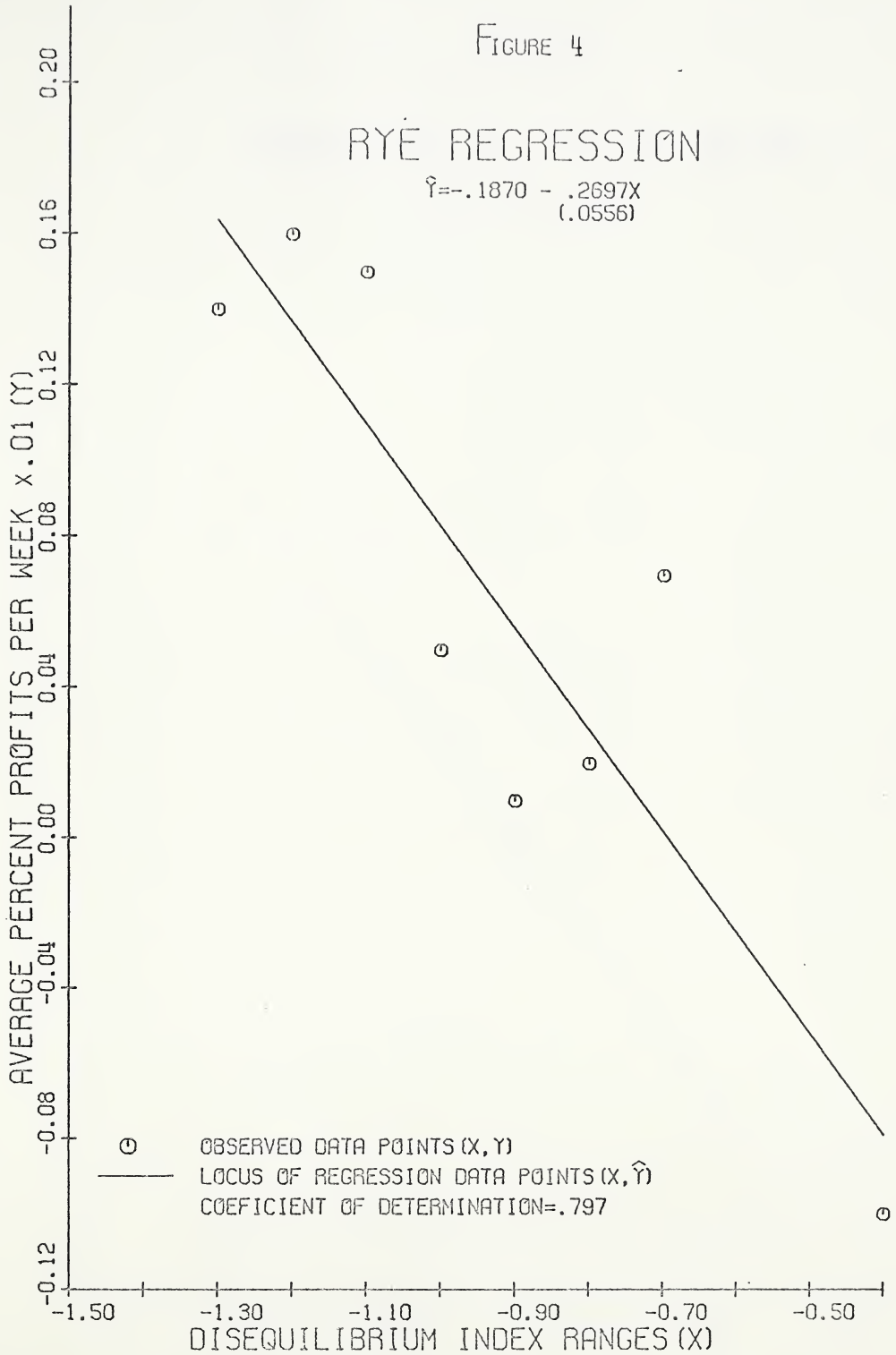




FIGURE 5

## SOYBEAN OIL REGRESSION

$$\hat{Y} = -.1784 - .2525X$$

$$(.0370)$$

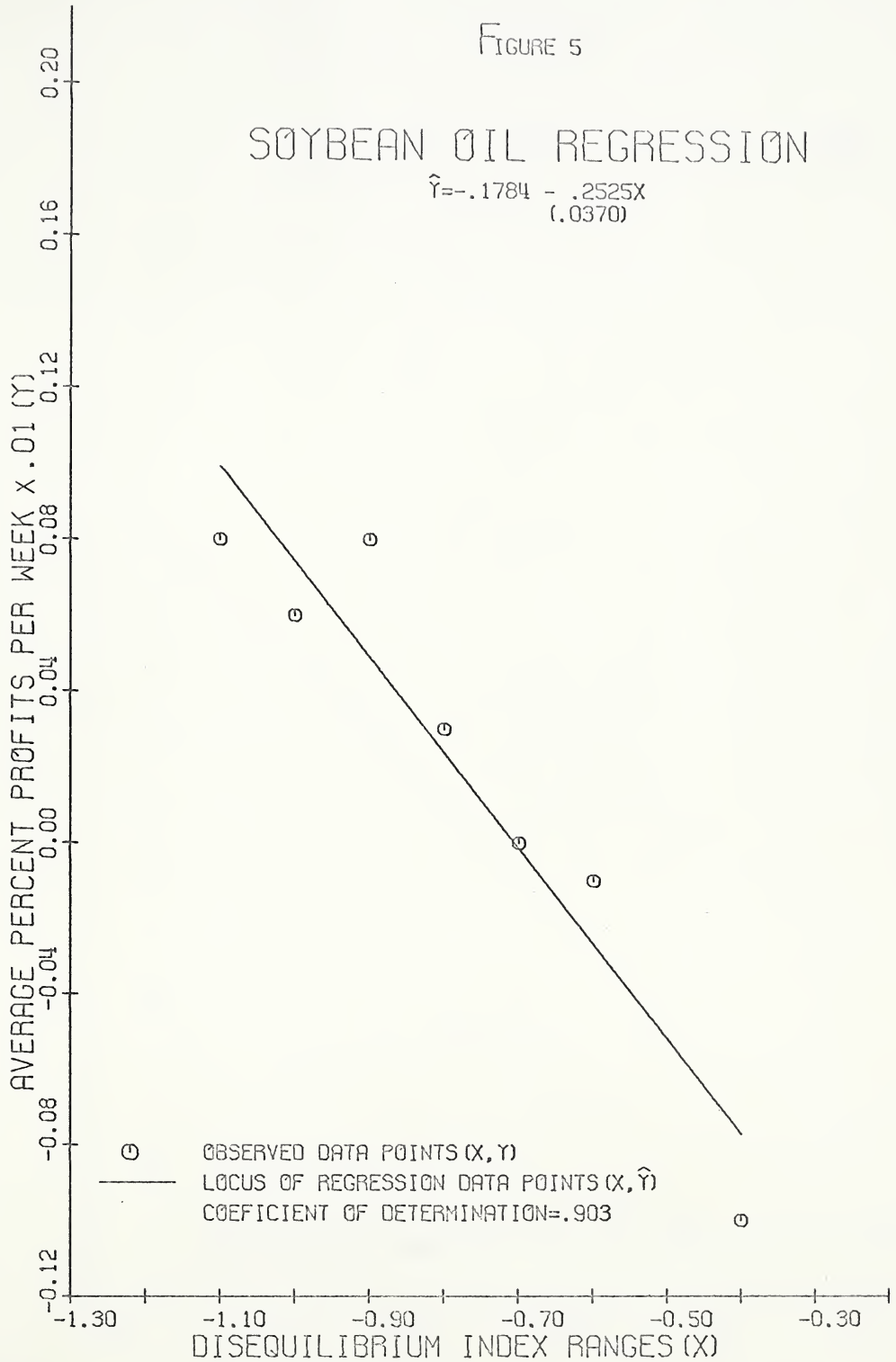




FIGURE 6

## SOYBEAN MEAL REGRESSION

$$Y = .0120 - .0967X$$

$$(.0828)$$

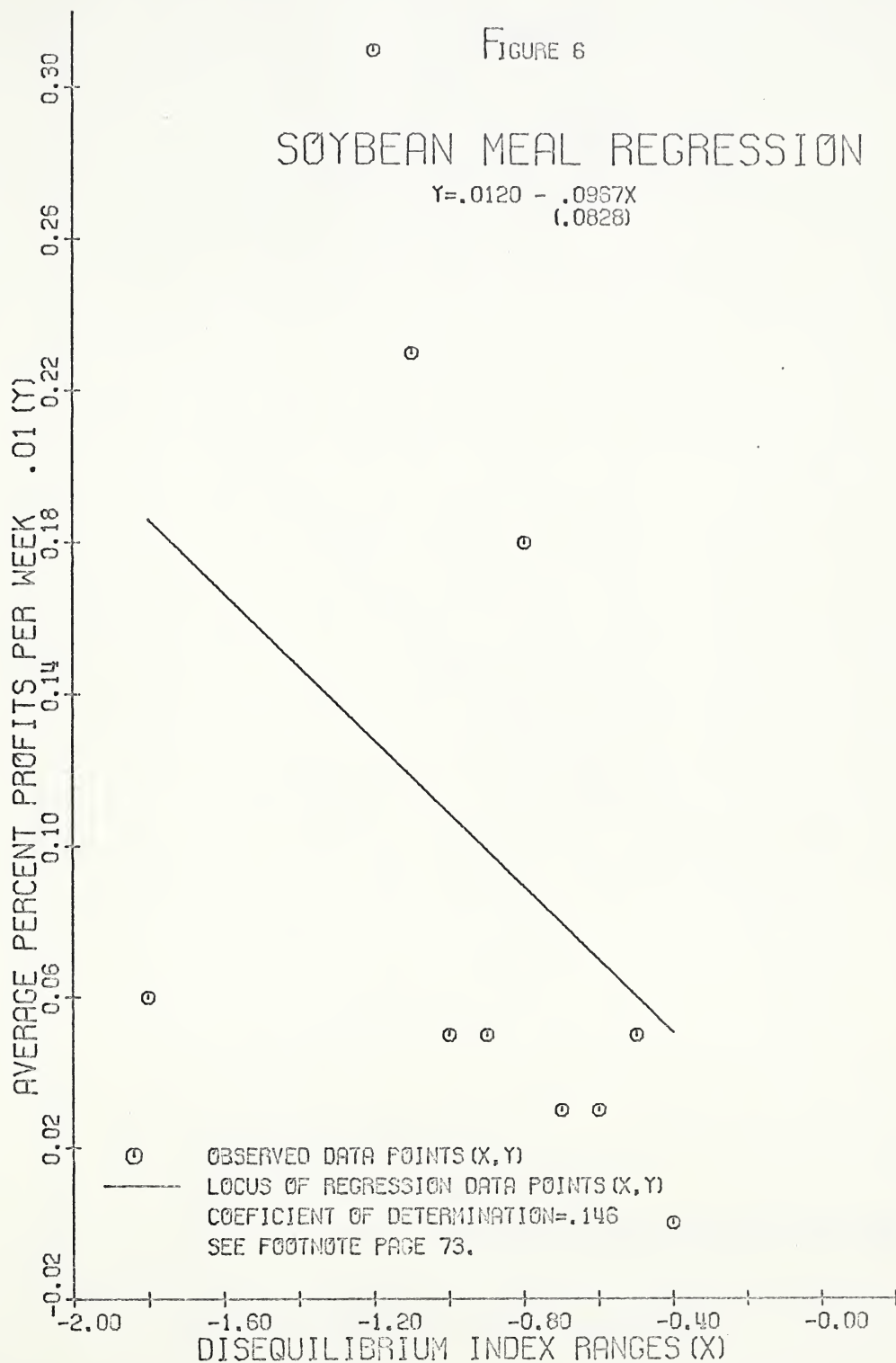






FIGURE 7

## WHEAT REGRESSION

$$\hat{Y} = (\text{ANTI-LOG } (0.3116 - .0872 \text{ LOG } X)) - 2$$

$$(.0102)$$

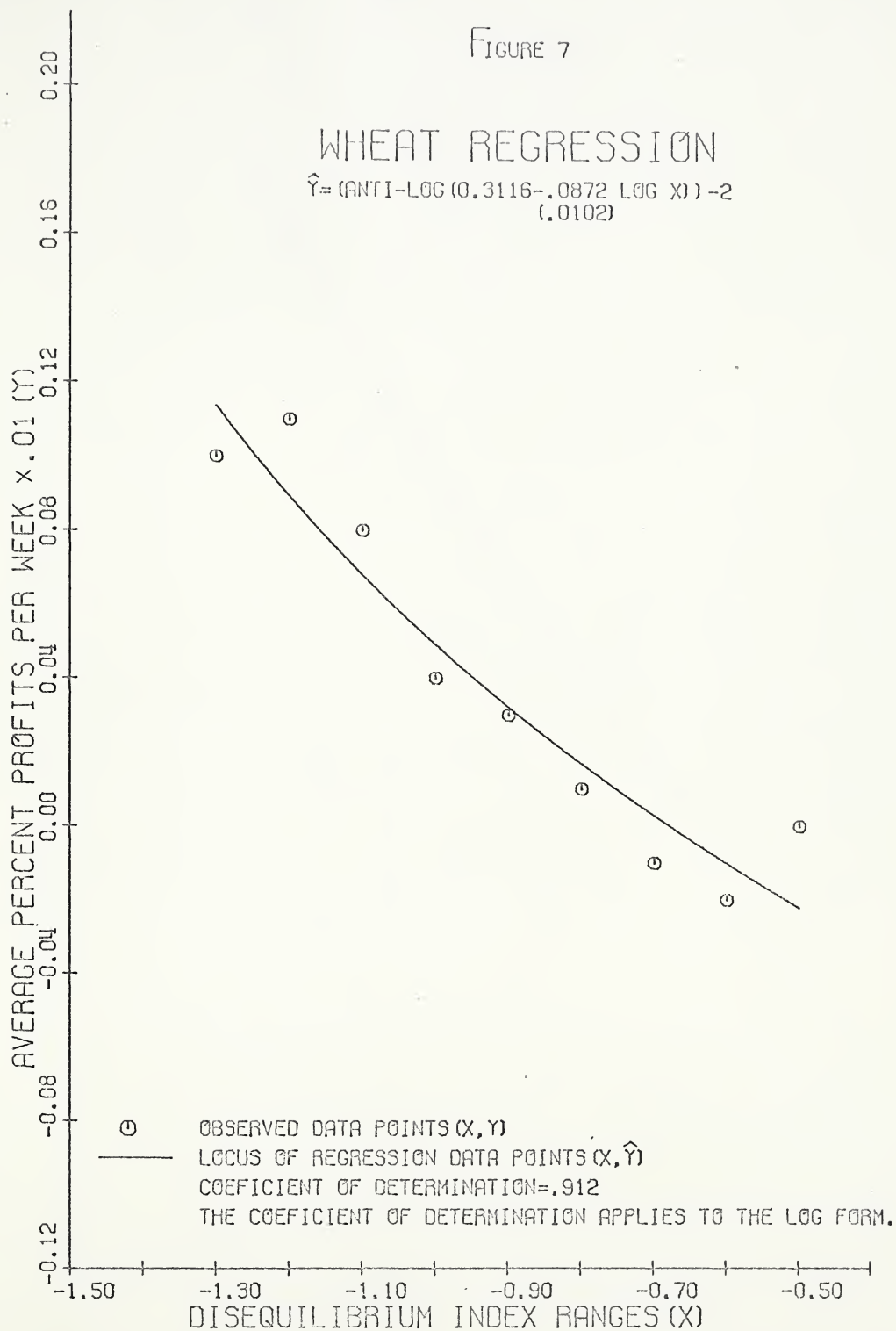




FIGURE 8

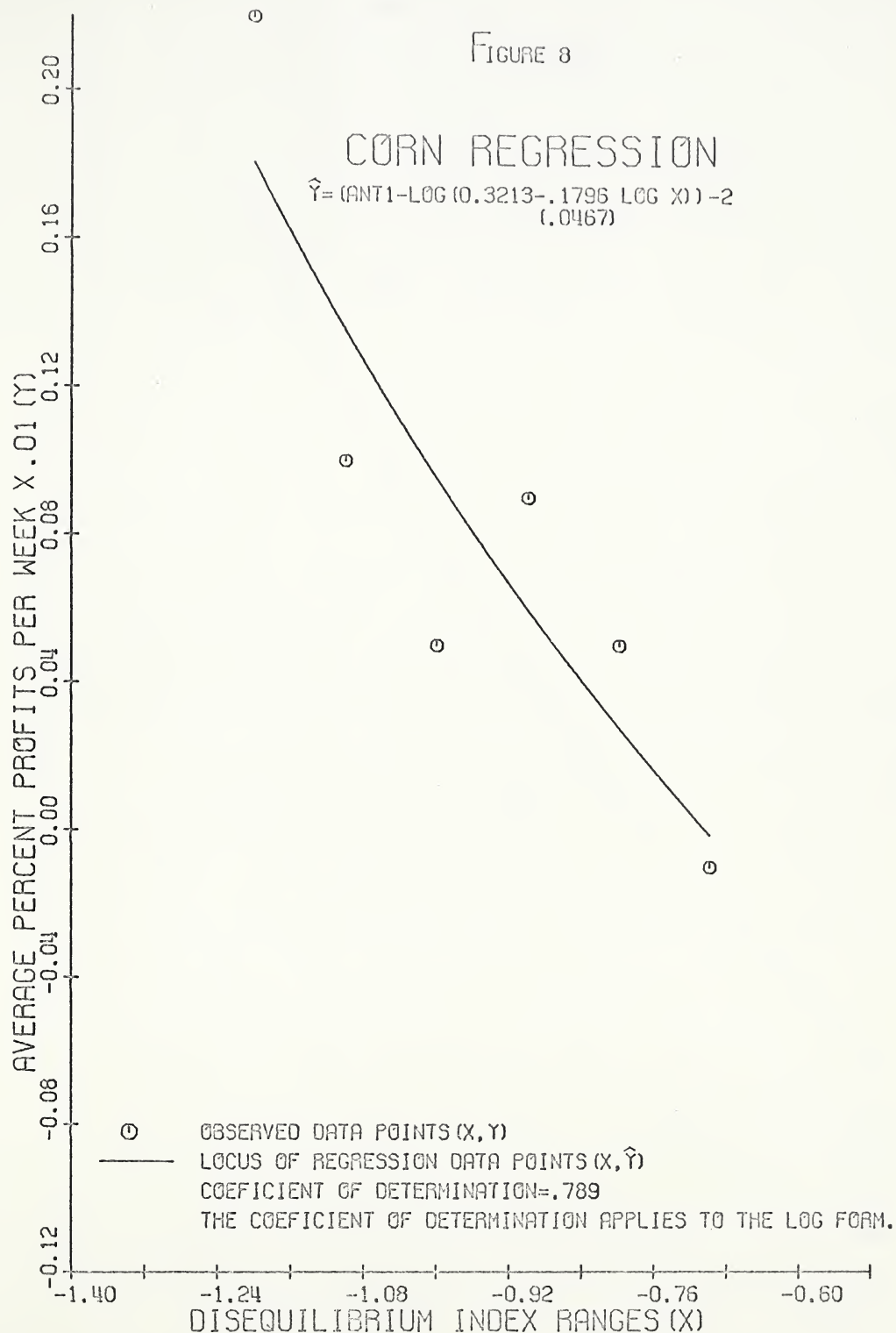




FIGURE 9

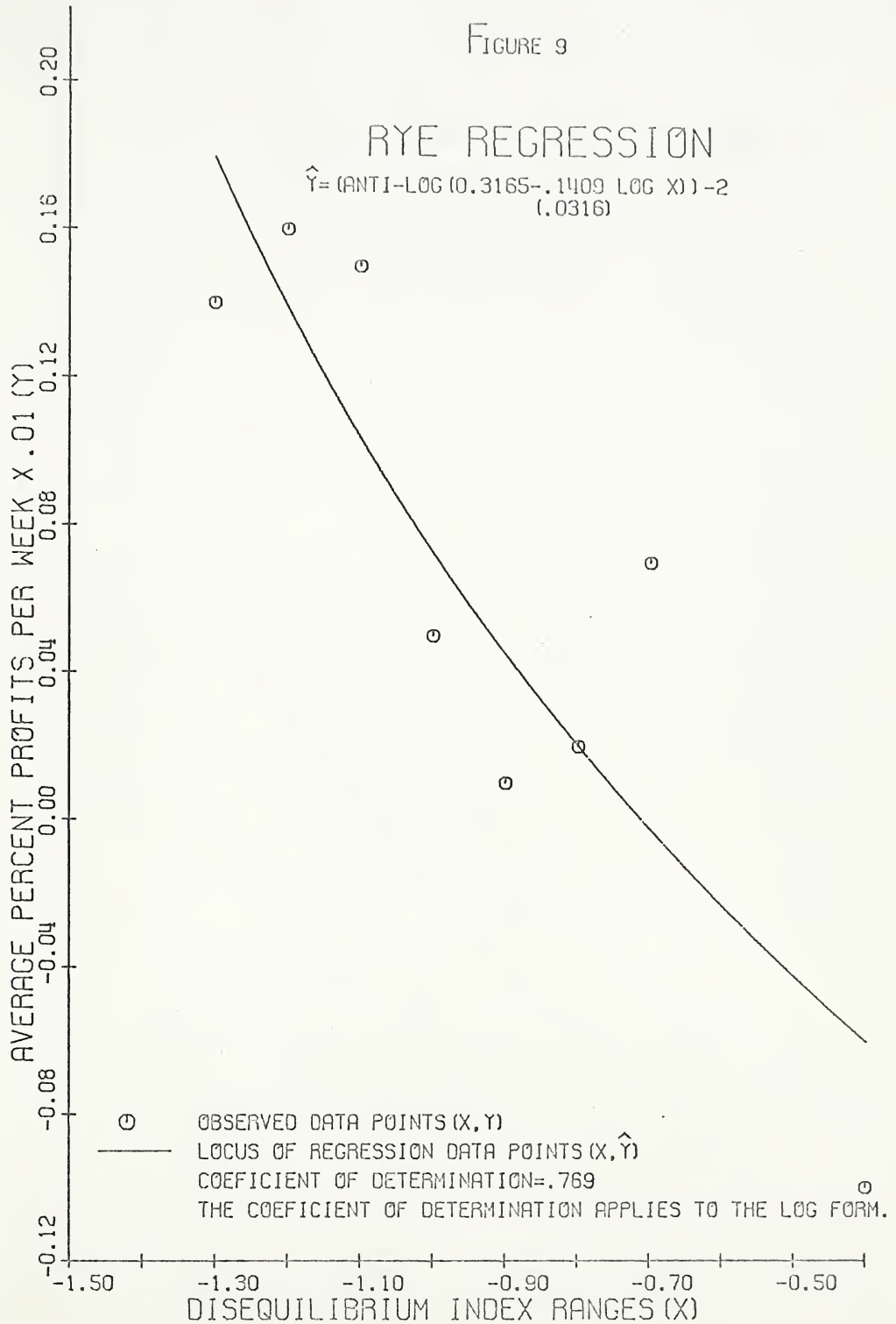




FIGURE 10

## SOYBEAN REGRESSION

$$\hat{Y} = (\text{ANTI-LOG } (0.3308 - .2837 \text{ LOG } X)) - 2$$

(.0893)

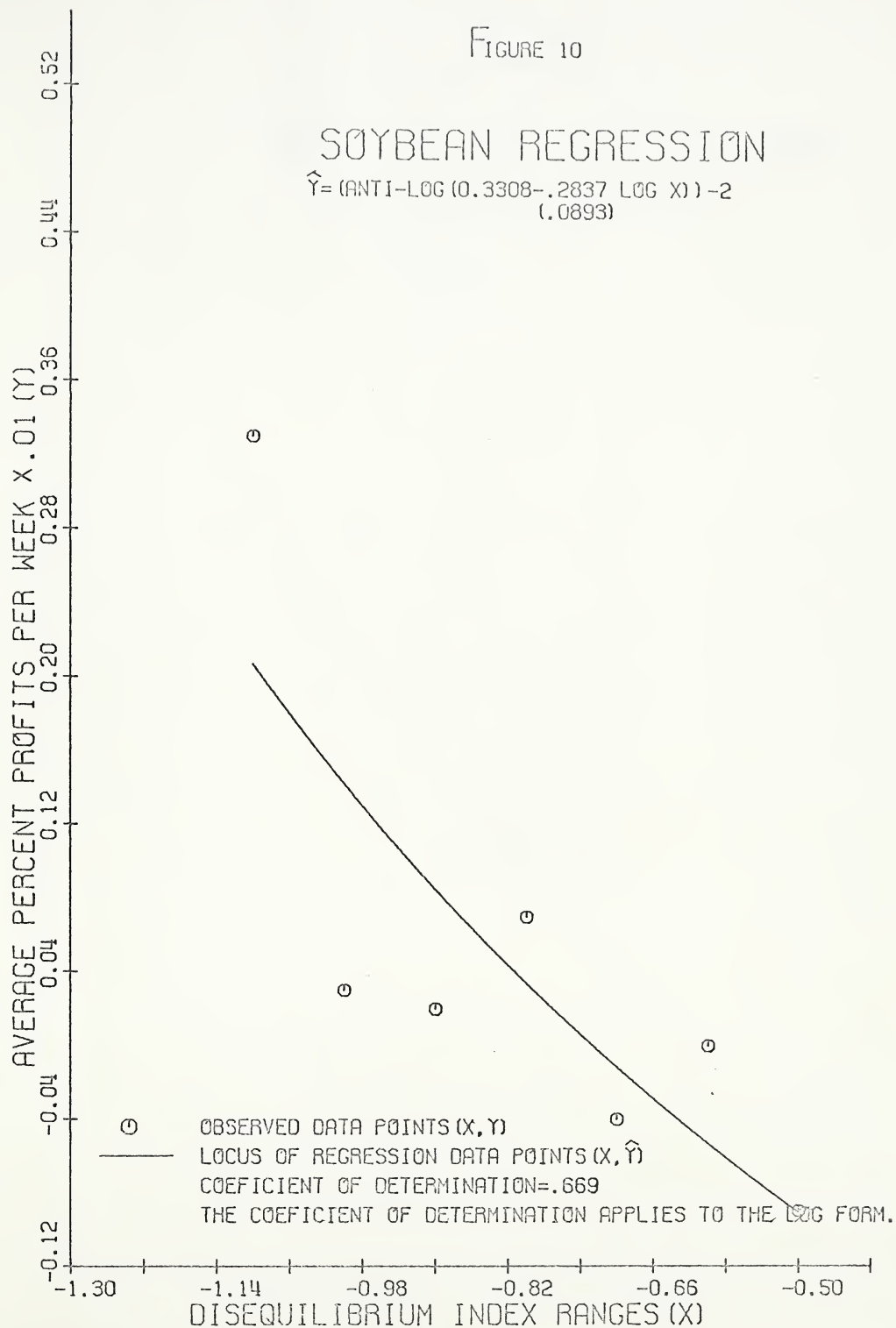






FIGURE 11

## SOYBEAN OIL REGRESSION

$$\hat{Y} = (\text{ANTI-LOG } (0.3167 - .1493 \text{ LOG } X)) - 2$$

(.0282)

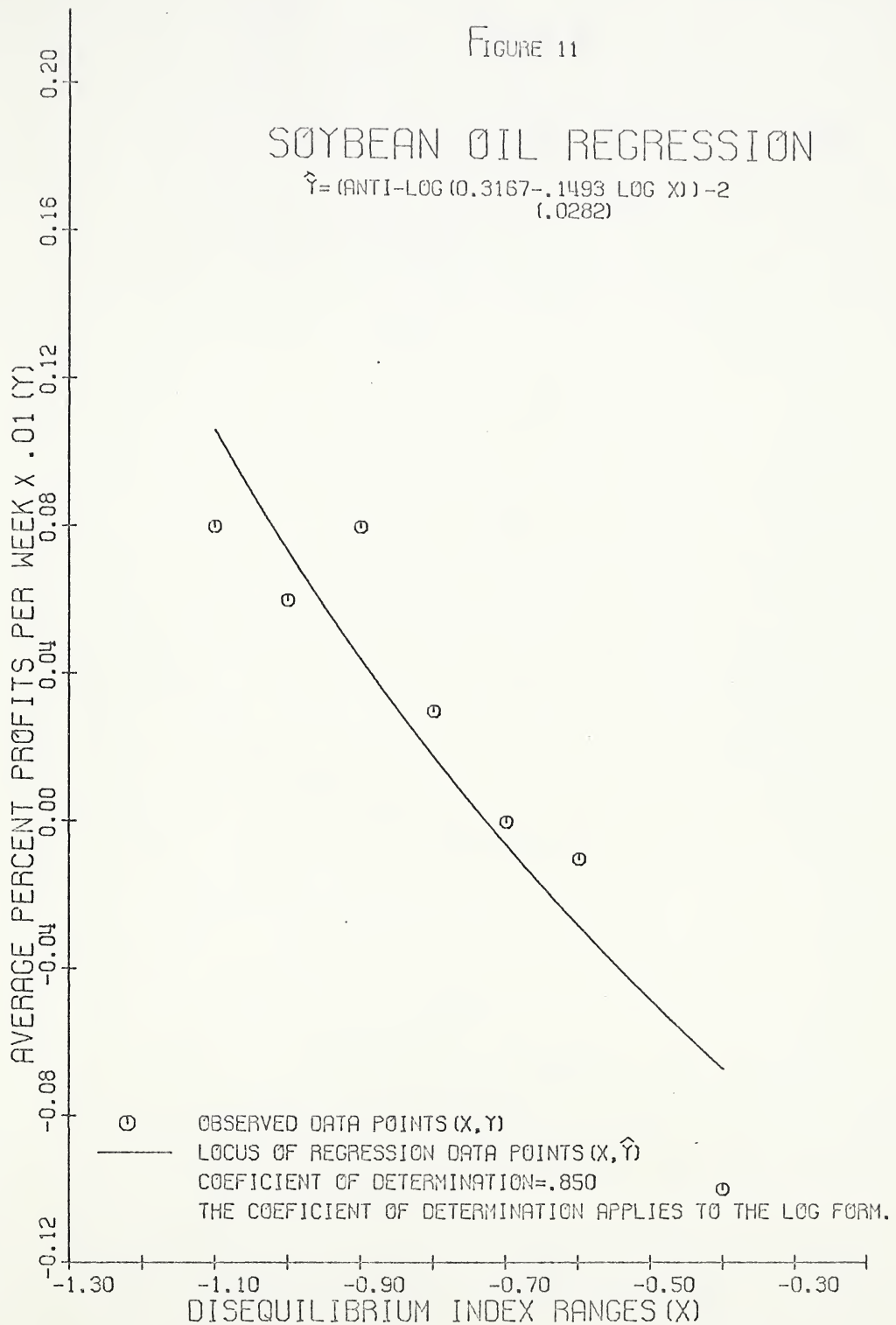


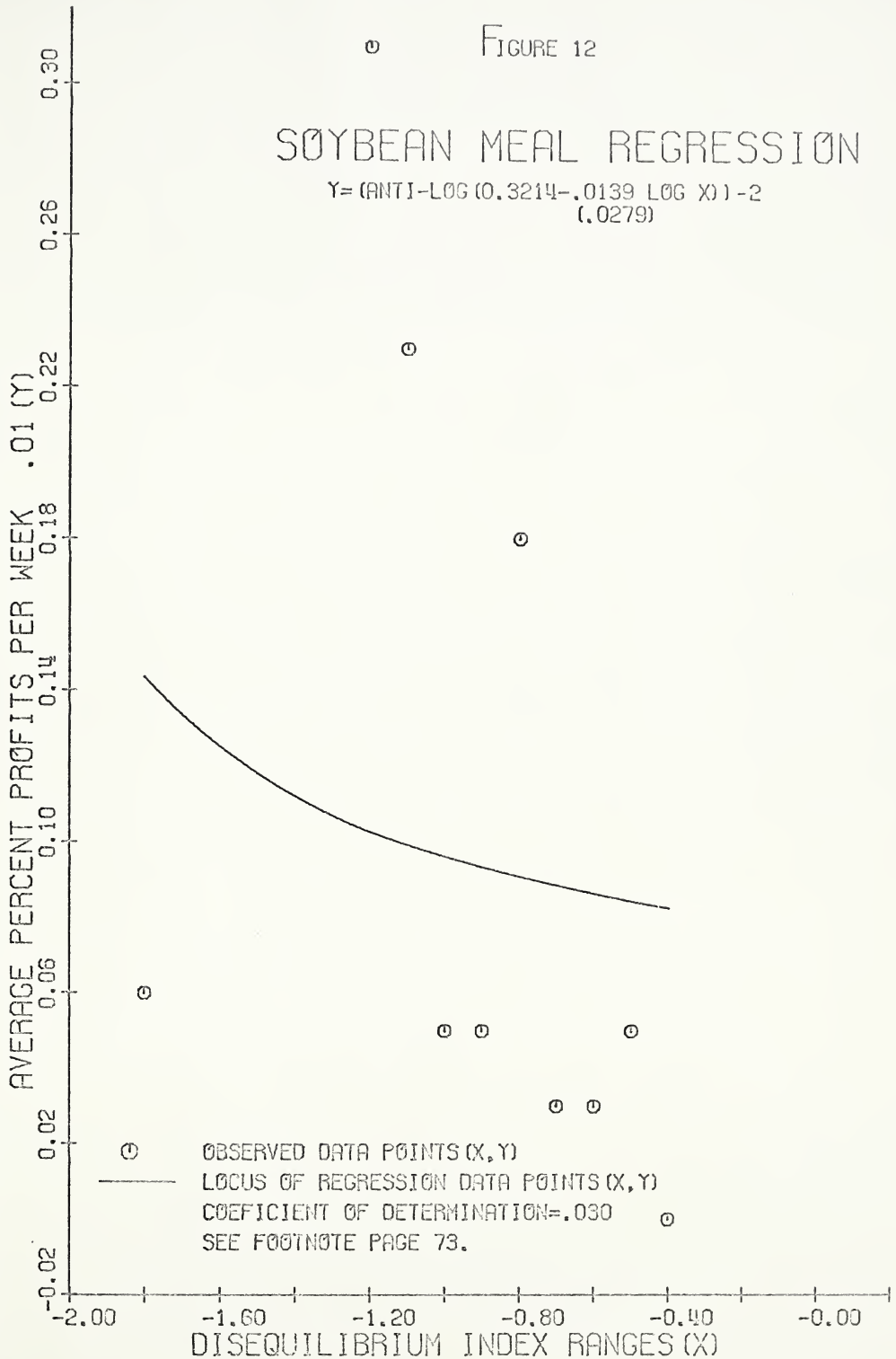


FIGURE 12

## SOYBEAN MEAL REGRESSION

$$Y = (\text{ANTI-LOG } (0.3214 - .0139 \text{ LOG } X)) - 2$$

(.0279)



















DATE DUE


THESIS

1970

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Lynn A. Malmberg

The Indifference Relation and  
Preference Elicitation

